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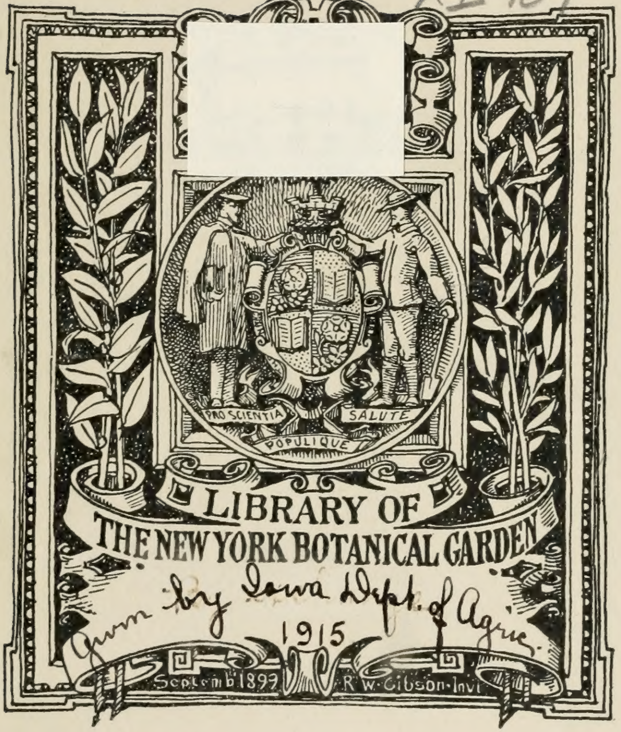
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FOURTEENTH ANNUAL

Iowa Year Book of Agriculture

Issued by the

Iowa Department of Agriculture

1914

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1915

LETTER OF TRANSMITTAL

OFFICE OF IOWA STATE DEPARTMENT OF AGRICULTURE.

Des Moines, Iowa, July 1, 1915.

To His Excellency, George W. Clarke, Governor of Iowa;

Sir.—I have the honor to transmit herewith the Fifteenth Annual Iowa Year Book of Agriculture for the year 1914.

ARTHUR R. COREY,
Secretary State Board of Agriculture.

XI
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1914

INTRODUCTORY

The 1914 Iowa Year Book of Agriculture, herewith presented, is the fifteenth volume issued by this department. The first Year Book was issued in 1900, following the passage of the law which did away with the State Agricultural Society and established the Department of Agriculture in its stead. The Agricultural Society issued its reports annually during its existence, forty-six annual reports having been published up to 1900.

A comparison of the summaries issued by the Iowa Weather and Crop Service in 1900 and in 1914 shows that the field crops in 1914 were worth more than twice as much as in 1900. The total value of the field crops in 1900 was $229,805,058 and in 1914, $465,793,419. There was a larger acreage in corn, in oats and all other small grain crops in 1914 than in 1900. Winter wheat was a very minor crop in 1900, the whole crop being worth only $631,203, while in 1914 it was worth $12,038,210. Alfalfa, which was grown in every county in the state last year, was not enumerated in the crop yields in 1900.

The crop statistics used this year are those of the Iowa Weather and Crop Service and the U. S. Department of Agriculture. The township assessors' figures for 1914 will not be available until late in the summer of 1915 inasmuch as the assessors are taking the census this year along with their other duties. Hence the crop statistics from the township assessors do not appear in this volume.

Part I contains a synopsis of the proceedings of the State Board of Agriculture and committee meetings during the year 1914.

Part II contains the proceedings of the State Agricultural Convention held in the agricultural rooms of the State House, December 9th. It includes the president's address and the reports of the secretary and treasurer; financial statement of farmer's institutes; the financial statement and statistics of county and district fairs and the report of the Iowa State Fair and Exposition for 1914.

Part III gives the proceedings of the sixth annual meeting of the Iowa County and District Fair Managers Association.

Part IV gives the press reports and live stock awards of the 1914 Iowa State Fair and Exposition.

Part V gives the proceedings of the annual meeting of the Iowa Swine Breeders Association.

Part VI contains extracts from the annual report of W. B. Barney, state dairy commissioner.

Part VII gives the proceedings of the thirty-eighth annual convention of the Iowa State Dairy Association.

Part VIII contains extracts from the annual report of Frank C. Pellett, State Bee Inspector.

Part IX gives the proceedings of the annual meeting of the Corn

Part X contains papers on Live Stock, Agricultural and Miscellaneous topics.

Part XI gives the annual report of the Iowa Weather and Crop Service for 1914.

Part XII contains statistical tables of Iowa's principal farm crops giving the total acreage, average yield per acre and total product by counties. Also the government tables showing acreage, production and value of the principal farm crops of the United States by states for 1913 and 1914, and also live stock tables giving estimated numbers on farms and value January 1, 1915, by states.

Part XIII contains the reports of agricultural conditions as given by county and district agricultural societies in Iowa.

Part XIV contains a directory of associations and organizations representing agricultural societies in Iowa.

STATE BOARD OF AGRICULTURE
1915

EX-OFFICIO MEMBERS.

Governor of State	Des Moines
President of Iowa State College	Ames
State Dairy Commissioner	Des Moines
State Veterinarian	Des Moines

OFFICERS.

C. E. Cameron, *President*	Alta
O. A. Olson, *Vice President*	Forest City
A. R. Corey, *Secretary*	Des Moines
W. W. Morrow, *Treasurer*	Afton

DISTRICT MEMBERS.

First District—C. H. Tribby	Mount Pleasant
Second District—C. W. Phillips	Maquoketa
Third District—Elmer M. Reeves	Waverly
Fourth District—E. J. Curtin	Decorah
Fifth District—Cyrus A. Tow	Norway
Sixth District—T. C. Legoe	What Cheer
Seventh District—Chas. F. Curtiss	Ames
Eighth District—Frank E. Sheldon	Mt. Ayr
Ninth District—John F. Summers	Malvern
Tenth District—John P. Mullen	Fonda
Eleventh District—H. L. Pike	Whiting

The President, Vice President, Secretary and Treasurer are elected for one year.

Terms of Directors from odd-numbered Districts expire second Wednesday
in December, 1915. Terms of Directors from even-numbered Districts expire second Wednesday
in December, 1916.

COMMITTEES

YEAR 1915

EXECUTIVE.

C. E. CAMERON...A. R. COREY

O. A. OLSON.

AUDITING.

C. W. PHILLIPS...J. P. MULLEN

T. C. LEGOE.

RESOLUTIONS.

E. J. CURTIN...F. E. SHELDON

C. H. TRIBBY.

POWERS AND DUTIES OF BOARD.

C. E. CAMERON...A. R. COREY

O. A. OLSON.

E. M. REEVES. C. F. CURTISS.

ADULTERATION OF FOODS, SEEDS AND OTHER PRODUCTS.

R. A. PEARSON...W. B. BARNEY

CYRUS A. TOW.

NOXIOUS WEEDS, FUNGUS DISEASE IN GRAINS, GRASSES, PLANTS, ETC.

E. M. REEVES...JOHN P. MULLEN

J. F. SUMMERS.

DAIRYING AND DAIRY PRODUCTS.

W. B. BARNEY...J. F. SUMMERS

C. F. CURTISS.

ANIMAL HUSBANDRY.

C. F. CURTISS...J. I. GIBSON

H. L. PIKE.

LEGISLATIVE.

C. E. CAMERON...A. R. COREY

O. A. OLSON.

J. P. MULLEN. E. J. CURTIN.

REVISION OF PREMIUM LIST, RULES AND REGULATIONS.

C. E. CAMERON...A. R. COREY

O. A. OLSON.

T. C. LEGOE. C. F. CURTISS.

H. L. PIKE.

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IOWA'S SOURCE OF WEALTH

FOR THE YEAR ENDING DECEMBER 31, 1914.

COMPILED FOR THE IOWA YEAR BOOK OF AGRICULTURE FROM ESTIMATES MADE BY THE IOWA WEATHER AND CROP SERVICE.

ACREAGE, PRODUCTION, AVERAGE YIELD AND VALUE PER ACRE AND TOTAL VALUE OF IOWA FARM PRODUCTS FOR THE YEAR 1914.

	Acreage	Production	Average per Acre	Average farm price Dec. 1, 1914	Value per acre	Total Value
Corn	9,324,300	363,689,600 bu.	39	$ .55	$21.45	$ 200,029,280
Oats	5,154,200	172,696,000 bu.	34	.41	13.94	70,805,360
Winter wheat	538,410	12,038,210 bu.	22	.97	21.34	11,677,063
Spring wheat	261,025	3,691,470 bu.	14	.94	13.16	3,469,981
Barley	437,400	11,423,310 bu.	26	.56	14.56	5,397,053
Rye	73,150	1,369,260 bu.	19	.77	14.63	1,054,320
Potatoes	110,205	9,540,200 bu.	87	.58	50.46	5,533,316
Flax seed	14,440	152,280 bu.	11	1.21	13.31	184,258
Hay (tame)	2,923,250	4,234,370 tons	1.4	10.78	15.09	45,646,508
Hay (wild)	684,070	860,280 tons	1.3	8.28	10.77	7,123,118
Alfalfa	88,070	319,853 tons	3.6	12.50	45.00	3,998,162
Pastures and grazing	------------	Estimated	------	--------	--------	84,000,000
Ensilage	------------	Estimated	------	--------	--------	3,750,000
Timothy seed	------------	Estimated	------	--------	--------	2,600,000
Clover seed	------------	Estimated	------	--------	--------	500,000
Sweet corn	------------	Estimated	------	--------	--------	525,000
Pop corn	------------	Estimated	------	--------	--------	500,000
Fruit crop	------------	Estimated	------	--------	--------	5,000,000
Garden truck	------------	Estimated	------	--------	--------	5,000,000
Miscellaneous crops	------------	Estimated	------	--------	--------	9,000,000
Total value	------------	------------------	------	--------	--------	$ 465,793,419
Wool	------------	Estimated	------	--------	--------	$ 1,350,000
Dairy products	------------	Estimated	------	--------	--------	50,000,000
Poultry and eggs	------------	Estimated	------	--------	--------	40,000,000
Total value farm products	------------	------------------	------	--------	--------	$ 557,143,419

NUMBER, AVERAGE VALUE AND TOTAL VALUE OF LIVE STOCK JANUARY 1, 1915.

Figures taken from Agricultural Outlook published by U. S. Department of Agriculture, February, 1915.

	Number all ages	Average value	Total value
Horses	1,600,000	$ 105.00	$ 168,000,000
Mules	58,000	111.00	6,438,000
Milch cows	1,377,000	57.00	78,489,000
Other cows	2,683,000	37.50	100,612,000
Swine	8,720,000	11.00	95,920,000
Sheep	1,249,000	5.60	6,994,000
Total	----------	----------	$ 456,453,000

IOWA FARM STATISTICS

Land area of Iowa	$	35,575,040
Total acreage in farms		31,658,759
Total number of farms		194,598
Average size of farms, acres		162.7
Total population, 1910		2,224,771
Rural population, 1910		1,544,717
Value of all farm property, 1910	$	3,745,861,000
Value of land, 1910	$	2,801,974,000
Value of buildings, 1910	$	455,406,000
Value of implements and machinery, 1910	$	95,478,000
Farms operated by owners and managers, 1910		134,929
Farms operated by tenants, 1910		82,115
Value of live stock	$	456,453,000
Value of farm crops and other products	$	557,143,419
Total value of live stock, farm crops and other products	$	1,013,596,419
Average value live stock, farm crops and other products per farm	$	5,209

MONTHLY WEATHER DATA FOR IOWA IN 1914.

MONTH	Temperature				Precipitation				Number of Days				Prevailing direction of wind
	Mean	Departure from normal	Highest	Lowest	Average	Departure from normal	Greatest	Least	1 in. or more of precip'n	Clear	Partly cloudy	Cloudy	
January	27.8	+9.9	64	—10	0.88	—0.17	2.34	0.27	5	11	8	12	nw
February	16.8	—3.7	59	—29	0.87	—0.28	1.99	0.32	6	10	9	9	nw
March	34.7	+1.4	78	— 5	1.69	—0.08	3.84	0.28	7	12	8	11	nw
April	48.6	—0.1	88	11	2.52	—0.34	5.03	0.37	8	10	2	12	nw
May	62.2	+1.7	98	25	3.31	—1.26	6.90	0.30	10	14	11	6	s
June	72.2	+3.1	101	40	5.57	+1.19	13.24	1.17	13	12	14	4	s
July	76.6	+2.5	109	43	2.27	—1.69	6.50	0.44	5	20	8	3	s
August	73.7	+1.9	103	40	2.19	—1.49	4.90	0.42	7	17	10	4	s
September	64.5	+1.1	99	30	7.88	+4.52	16.24	2.48	10	15	8	7	s
October	55.9	+5.1	88	14	3.23	+0.77	6.64	0.74	9	16	6	9	s
November	41.0	+6.0	80	- 4	0.22	—1.29	0.95	0.00	2	19	6	5	nw
December	15.7	—8.2	63	—31	1.30	+0.08	2.24	0.57	9	10	6	15	nw
Annual	49.1	+1.7	109	—31	31.93	—0.04	16.24	0.00	91	166	102	97	s

PART I

Synopsis of Proceedings of the Iowa State Board of Agriculture and Committee Meetings, 1914

A synopsis of the transactions of the Iowa State Board of Agriculture during the year from Tuesday, December 11, 1913, up to and including the meeting of December 11, 1914, is given in this part. All meetings of the board, the executive committee and special committee meetings are presented.

MEETING OF THE STATE BOARD OF AGRICULTURE.
THURSDAY, DECEMBER 11, 1913.

Board met at 10 o'clock a. m. in the rooms of the Department of Agriculture, with the following members present: Cameron, Olson, Corey, Phillips, Reeves, Curtin, Wentworth, Legoe, Curtiss, Sheldon, Summers, Mullen, Pike and Gibson.

Minutes of the board meetings on May 16-17 and August 29, and all committee meetings were read and approved.

Mr. Wentworth offered the following resolution: That the amount of money ($29.05) which was collected and turned in by the Public Safety Department be returned to that department. Seconded by Mr. Legoe. Resolution adopted.

Mr. Wentworth read the report of the Public Safety Department, and by order of the president, same was placed on file.

To the State Board of Agriculture:

Gentlemen: In submitting my report for the work of my department for the year 1913, I would prefix same by calling attention to the reports and recommendations made in 1911 and 1912, but for ready comparison I will quote therefrom the following:

"In 1911 we had a total of 144 men; 127 footmen and 15 mounted, the chief and assistant to the chief, with an aggregate of 1,023 days' service. In 1912 we had 163 men; 137 footmen and 24 mounted, the chief and assistant to the chief, with an aggregate of 1,201 days."

For the year just closing we had a total of 186 men; 158 footmen, 28 mounted, the chief and assistant to the chief, with an aggregate of 1,508 days police duty. The expense being divided as follows:

General grounds policing	$3,809.45
Camp grounds	195.00
Marshals	135.00
Superintendents, assistant, etc.	99.00
Total	$4,238.45

There was an increase of 307 days work and $669.98 expense. Nothing that I can say better shows the real increase and growth of the Iowa State Fair than the demands made upon this department, and at this time I wish to call attention to the remarkable, as I believe, record made during the 1913 fair. There was not a single case of pocket picking, loss from tent, or other evidence of pilfering of the light-fingered gentry reported to our office.

In the camp feature we also note a steady increase, over 1,700 tents being pitched and occupied practically throughout the fair, an increase of about 125 over the previous year. During the days the camp grounds were policed by mounted men for the first time, an innovation which met with the approval of all. As their duties were largely those of guides, they were much more readily reached and could be of greater assistance to the visitors at the grounds.

I again urge the desirability of increasing the wages of both the mounted and the foot men. The cost of living on the grounds has steadily increased; the bills for feed for the mounted men are such that they actually do not break even when shipping expense and feed bills are added to their own board bills. This should not be and I would suggest that we be at least as liberal in this matter as our neighboring state of Minnesota, which pays its mounted men $5 per day and furnishes the feed for the horses. Minnesota also pays her foot men $3 per day and they have in addition to that an average of fifty men in uniform from the Twin Cities, the only expense to the association being the furnishing of the men their meals while on duty.

I would again call, and urge, attention to better housing conditions for the men, and suggest the desirability of the board purchasing from the county of Polk the building now on the grounds and formerly used as a public comfort station and waiting room for the inhabitants of that county and their friends. At comparatively small expense this could be fitted up into ideal police headquarters and the time has come, in the judgment of your superintendent, when we must pay just regard to the comfort of the men who come here and work an average of sixteen hours out of the twenty-four, giving faithful, efficient service and contributing in a large measure to the success of the fair.

I wish to thank the members of the board, and the officers and the men in this department for their cheerful co-operation and prompt obedience to all instructions, rules and regulations.

Respectfully submitted,
E. M. WENTWORTH,
Superintendent.

On motion of Mr. Pike, the board adjourned.

The board reassembled and the following newly elected members were sworn in by B. W. Garrett, clerk of the supreme court: Cameron, Olson, Tribby, Reeves, Curtiss, Summers and Pike.

On roll call the following members of the board responded: Cameron, Olson, Corey, Tribby, Phillips, Reeves, Curtin, Legoe, Curtiss, Sheldon, Summers, Mullen and Pike.

The election of secretary was first taken up and Mr. Curtiss moved that Mr. A. R. Corey be re-elected secretary for the ensuing year, his salary to be $2200.00 per annum until April 23, 1914, and $2600.00 after that date, as fixed by statute. Seconded by Mr. Curtin. Motion carried.

The election of treasurer was then considered. Mr. Curtin moved that Mr. Gilbertson be elected treasurer for the ensuing year, at a salary of $100.00. Seconded by Mr. Olson. Motion carried.

Mr. Reeves moved that the secretary furnish surety bond of $10,000.00 and that the premium of $25.00 be paid by the department. Motion carried.

Mr. Mullen moved that the treasurer's bond be fixed at $100,000.00. Seconded by Mr. Reeves. Motion carried.

Mr. Curtiss moved that James H. Deemer be re-elected superintendent of grounds at a salary of $100.00 per month. Seconded by Mr. Legoe. Motion carried.

Mr. Curtin moved that the executive committee be authorized and instructed to buy lots to square out the southwest corner of the grounds whenever in their judgment these lots are offered at a reasonable price. Motion seconded and carried.

Mr. Reeves made the following motion: That the dates of the 1914 fair be August 26 to September 3 inclusive; that the admission fee on Wednesday, Thursday and Sunday, August 26, 27 and 30 respectively, be twenty-five cents, and that the regular fee of fifty cents be charged on all other days; all exhibits and live stock to be in place at nine o'clock Friday morning, August 28, and remain in place until Friday morning at six o'clock, September 4, and that the following rule be printed in the premium list: "Exhibits not to be packed or removed until six o'clock a. m. Friday, September 4."

Seconded by Mr. Legoe.

Motion carried.

On motion the board took a recess until one o'clock.

AFTERNOON SESSION.

Board convened at one o'clock with members present as at the morning session, also Dr. R. A. Pearson, ex-officio member of the board.

The secretary made the following report to the board:

SECRETARY'S REPORT TO BOARD.

The purpose of my report to the board is to call your attention to a number of matters that should have your attention and action at this time; to briefly analyze the financial condition of the department and to call your attention to the many needed improvements that have been discussed by the executive committee and members of the board.

I am aware that it will not be possible to make all the improvements mentioned, but it is for the board to decide which shall be made, and I trust you will give them careful consideration before any action is taken.

By referring to the printed financial statement you will note the balance on hand December 1, 1913, is $18,759.32.

I have made a careful analysis of the receipts other than fair which come from the fees of the division of horse breeding, fair ground collections by the superintendent of grounds, the appropriation of $1,000.00 for insurance and $2,400.00 for the support of the department.

I have also analyzed the expense other than for fair or improvements which consists of salaries and clerical help for the division of horse breeding, the expense of printing certificates and the annual report of that division, the salaries of the superintendent of the publicity department and one stenographer, cost of printing and mailing "Greater Iowa" and other pamphlets published by the publicity department, the insurance premiums which will amount to $1,400.00 during 1914, and the maintenance of grounds and buildings, which has amounted to between $6,000.00 and $7,000.00 each year for the past two years.

I have reached the conclusion that the receipts other than fair will take care of the expense other than fair or improvements. Therefore the board may appropriate for permanent improvements the balance on hand and such amount as you may wish to anticipate from the receipts of the 1914 fair.

One proposition that should have the attention of the board in the way of improvements is the purchase of nine lots at the southwest corner of the grounds. As soon as this ground can be secured I believe the street running north and south immediately east of the street car entrance should be continued to the south line and an automobile entrance put in at that point. Mr. Olson can tell you that the vehicle entrance on Rock Island Avenue is not adapted for the handling of automobiles and that the main automobile entrance on Grand Avenue will soon prove inadequate to handle the traffic if it continues to increase the way it has for the past two years. In fact, it was congested during the last fair on several days. I might also add that a number now use Dean Avenue—on which this new entrance would open as a means of reaching the grounds in automobiles. They prefer it to the rough pavement on Grand Avenue. This street is also being paved and I understand will be paved a greater portion of the distance within the next few years.

We have estimated the cost of these nine lots and the two houses thereon at $2,750. In addition to this it would be necessary to extend the storm sewer 160 feet, grade the new street, change the fence and put in an entrance, all of which would cost not less than $1,000.00.

Another improvement contingent upon the purchase of these lots is the moving of Power Hall to a location just south of the street car entrance and on the west side of the street leading to the new Dean Avenue entrance. In case the building is moved to this or another location it would be necessary to put on a new shingle roof. The new roof would cost about $1,000.00 and moving and replacing the foundation would cost, as estimated by our superintendent of grounds, $1,000.00. The building is in a good state of preservation with the exception of the shingle roof. This year but 7,920 square feet of floor space in this building was rented, out of the 12,540 square feet available. It is difficult to dispose of the floor space on account of the bad condition of the roof and the undesirable location.

Another matter the board should not overlook is to make allowance for approximately 18,000 square feet of cement walk. This would include a twelve foot walk from Rock Island Avenue to the west entrance to the Women and Children's Building, twenty foot walks around the court, along the west front and along the north side of the Women and Children's Building. This will cost approximately $1,800.00.

It will also be necessary to place the street leading from Rock Island Avenue to the Women and Children's Building to grade. In order to have it in keeping with the surroundings it should be curbed and macadamized, or at least covered with a good layer of cinders and oiled. It would also be well to consider placing a row of electroliers on each side of the street.

Should the board decide to put in the coin controlled turnstile at all outside gates it would be necessary to purchase 12 complete outfits at a cost of $135.00 each, or $1,620.00. It would be possible to return two turnstiles and chopper boxes purchased in 1913 and receive a credit of $230.00, reducing the cost to $1,390.00 plus the freight and expense of installing. It might also be possible to dispose of some of the old turnstiles and chopper boxes to county fairs and thus considerably reduce the cost of the change.

The special National Cash Register manufactured for collecting admissions at team gates, and which is used successfully at the New York and South Dakota State Fairs, costs $410.00. Should the board adopt this plan it would be necessary to have two machines, and three if the new automobile entrance is put in at the southwest corner of the grounds.

The roof on the swine pavilion and the porch roofs of the Administration Building should have a coat of tar and gravel. We have consulted two roofing concerns regarding this matter and they tell us that with these repairs the roofs should be good for seven years; otherwise they will go to pieces within the next two or three years and would require an entire new roof, at a cost of $3.50 per square. There are approximately 1400 squares in the swine pavilion roof and 800 squares in the porches of the Administration Building. The cost would be about $1.75 per square, or $3,850.00 to put both roofs in good repair.

The need of toilets near the Administration Building for both men and women is more apparent each year, and while it may not be possible to alter this condition, another year the matter should be kept in mind. It would be impossible to install two sets in the room under the main lobby of the Administration Building, which is partially excavated, with entrances at each side of the steps at the south entrance to the building.

The other improvements that have been discussed by the board are the paddock for horses entered in the races and the tunnel under the track. Also the cross section of the cattle barn, or one or two of the individual units of the cattle barn.

I believe the time has come when more attention should be given to beautifying the grounds. Practically all of our streets and walks are located and the arrangement of the permanent buildings is fixed. I am of the opinion that the board could well afford to spend a little more money than we are now spending on plants and flowers, vines and shrubbery. I believe it would prove profitable to employ a professional gardener four or five months out of the year to supervise and carry out the work. The shrubbery has had but little attention and needs cutting back. A great deal could be done to beautify the buildings by planting creeping vines about them similar to those along the west side of the swine pavilion. With the care and attention of a gardener beautiful beds of flowers may be grown from seeds or annuals. These flowers, in addition to the beds grown from bulbs and roots, would greatly increase the beauty of the grounds. At present we spend about $400.00 annually for roots and bulbs and no attempt is made to save the roots. I see no reason why a root cellar could not be constructed at a nominal cost and these roots and bulbs stored therein. They could then be started in the spring in our own green house.

In addition to the recommendations made by the superintendent of the agricultural department for changes in the classification I should like to submit the following:

In the class for individual farm exhibits I would recommend that $125.00 be appropriated for each exhibit scoring above the minimum in the classes for farms over 80 acres and for farms under 80 acres and $100.00 for each exhibit in the class for Polk county farms, to be divided pro rata among the exhibitors scoring above a minimum of 50 points, in place of $850.00 in each of the first two classes mentioned and $250.00 in the class for Polk county. I would also recommend that a committee be appointed to formulate a score card for these classes. The purpose of the score card is for the information of the exhibitors so that they may know the quantity of each sample required and the number of varieties necessary for a perfect score in so far as quantity and variety are concerned.

I would also like to have the board consider a plan for county exhibits to be put on by county advisers. The plan has been discussed by the superintendent of the department, his assistant Mr. Heathershaw, Mr. Coverdale who is in charge of the county advisers, and your secretary. The tentative plan outlined is about as follows:

The exhibit to be put on by the county advisers in counties organized and working in co-operation with the extension department and the U. S. Government; the fair management to offer $150.00 cash for each exhibit scoring above a minimum of 50 points. The money so offered to go into a fund to be divided pro rata on points scored above the minimum. Additional premiums to be awarded to five county exhibits scoring highest on beauty of arrangement. These latter premiums need not be large; say $100 divided $30, $25, $20, $15, $10. The purpose of these special premiums would be to encourage beauty of arrangement inasmuch as the other money would be awarded almost entirely for quality of exhibits. It would also be necessary to provide a score card so that the advisers might know what would constitute a perfect score for quantity and variety of exhibit, similar to the score card mentioned for the individual farm exhibits, except that the variety and quantity shown should be greater. We have the assurance of Mr. Coverdale that if a class for these exhibits is adopted that he will make it a duty of each of these advisers to provide and put up an exhibit at the state fair.

In regard to the art exhibit, it is a well known fact that we have been unable to induce anyone to exhibit anything of value or worthy of mention for the reason that it has been necessary to house the exhibits in a frame building, familarly known as the "Art Barn." In the basement of the Women and Children's Building we will have a room 46x70 with a fifteen foot ceiling and dead walls on one side and both ends. This room is absoutely fire proof and would make an ideal place for such an exhibit. I would recommend that the board authorize placing the exhibit in this room and a thorough revision of the classification. I am of the opinion that the classification should be open to the world and the exhibits should be insured for two-thirds of their value from the time they leave the possession of the owner until they are returned in order to secure a high class exhibit.

The board should at this meeting recommend to the governor that George M. Chappel be appointed to succeed himself as director of the Iowa Weather and Crop Service for two years.

ADMISSIONS TO GRAND STAND AFTERNOON AND EVENING 1913, AS COMPARED WITH 1912.

	1913 Fair		1912 Fair	
	Day Admissions	Night Admissions	Day Admissions	Night Admissions
Friday	3,751	5,865	--------	--------
Saturday	4,911	5,848	2,333	3,599
Monday	11,378	17,316	8,864	11,560
Tuesday	12,152	15,966	12,179	14,963
Wednesday	7,712	8,226	11,744	13,832
Thursday	4,276	1,600	8,618	7,660
Friday	--------	--------	4,129	--------
Total admissions	44,180	54,821	47,837	51,614

ADMISSIONS TO LIVE STOCK AND HIPPODROME SHOW 1913, AS COMPARED WITH 1912.

	1913	1912
Saturday	1,042	------
*Sunday	1,787	------
Monday	1,826	1,233
Tuesday	2,472	2,265
Wednesday	1,566	2,070
Thursday	438	1,262
Total admissions	9,131	6,830

*Philharmonic choir, sacred concert.

RECAPITULATION TICKET SALES 1913 FAIR COMPARED WITH 1912.

	1913			1912		
	Number	Price	Total value	Number	Price	Total value
General admission	142,870	$.50	$71,435.00	136,742	$.50	$68,371.00
Gen. admission after 5 p. m.	16,671	.25	4,167.75	12,066	.25	3,016.50
Children	13,737	.25	3,434.25	11,672	.25	2,918.00
Half fare	19,065	.25	4,766.25	15,313	.25	3,828.25
Campers	7,720	.40	3,088.00	7,845	.40	3,138.00
Exhibitors	7,035	.384	2,704.00	6,802	.384	2,612.00
Total paid admissions	207,098	--------	$89,595.25	190,440	--------	$83,883.75

DAY AMPHITHEATER.

Bleachers and paddock	15,214	$.25	$ 3,803.50	17,671	$.25	$ 4,417.75
Quarter stretch	2,469	.25	617.25	1,679	.25	419.75
Reserved seats	24,950	.50	12,475.00	17,101	.50	8,550.50
				6,655	.75	4,991.25
Reserved box seats	1,777	.75	1,332.75	1,280	1.00	1,280.00
Total day amphitheater	44,410	--------	$18,228.50	44,386	--------	$19,659.25

RECAPITULATION TICKET SALES—CONTINUED

NIGHT AMPHITHEATER.

	1913			1912		
	Number	Price	Total Value	Number	Price	Total Value
Bleachers and paddock	30,039	$ .25	$ 7,509.75	28,576	$ .25	$ 7,144.00
Reserved seats	21,808	.50	10,904.00	13,785	.50	6,892.50
				5,586	.75	4,189.50
Reserved box seats	1,498	.75	1,123.50	833	1.00	833.00
Total night amphitheater	53,345	-------	$19,537.25	48,780	--------	$19,059.00

STOCK PAVILION.

	1913			1912		
	Number	Price	Total Value	Number	Price	Total Value
Reserved seats	5,912	$.50	$ 2,956.00	6,020	$.50	$ 3,010.00
Standing room	2,191	.25	547.75	575	.25	143.75
Total stock pavilion	8,103		$ 3,503.75	5,595	--------	$ 3,153.75

TICKET SALES: 1913, $130,864.75; 1912, $125,755.75; Increase, $5,109.00.

COMPARATIVE STATEMENT OF RECEIPTS 1912 AND 1913 FAIRS.

	1913	1912	Increase	Decrease
Horse Department	$ 1,751.00	$ 1,745.00	$ 6.00	
Cattle department	970.00	988.00		$ 18.00
Sheep department	118.00	138.00		20.00
Poultry department	691.05	731.45		40.40
Swine department	784.00	1,076.00		292.00
Machinery department	5,184.40	6,191.37		1,006.97
Agricultural department	2,115.00	1,695.00	420.00	
Dairy Department	1,679.50	1,731.85		52.35
Fine Arts department	2,665.00	2,890.00		225.00
Police department	29.05	69.90		40.85
Concession department	25,836.16	23,632.85	2,203.31	
Speed department	4,453.80	6,166.50		1,712.20
Forage department	5,043.84	5,595.10		551.26
Association specials	5,535.49	4,894.46	641.03	
Miscellaneous receipts	53.50	103.80		50.30
Premium list advertising	799.00	695.50	103.50	
Telephone exchange	258.56		258.56	
Ticket sales	130,864.75	125,755.75	5,109.00	
Dog show		1,601.18		1,601.18
Totals	$ 188,832.10	$ 185,701.21	$ 8,741.40	$ 5,610.18

COMPARISON OF CASH PREMIUMS PAID 1912 AND 1913.

	1913	1912	Increase	Decrease
Horses	$ 15,612.50	$ 14,940.00	$ 672.50	----------
Cattle	12,623.00	11,738.00	885.00	----------
Swine	4,404.00	4,042.00	362.00	----------
Sheep	2,317.00	2,306.00	11.00	----------
Poultry	1,172.50	1,112.50	60.00	----------
Agriculture	4,173.00	4,059.00	114.00	----------
Pantry and apiary	1,215.00	1,092.50	122.50	----------
Fruit	1,614.00	1,139.25	474.75	----------
Dairy	602.00	627.00	----------	$ 25.00
Plants and flowers	1,439.40	1,382.40	57.00	----------
Fine arts	1,658.50	1,662.50	----------	4.00
Schools	665.00	430.00	235.00	----------
Scholarships	650.00	650.00	----------	----------
Speed department	12,620.00	12,360.00	260.00	----------
Dog show	----------	318.00	----------	318.00
Babies' health contest	304.00	280.00	24.00	----------
Totals	$ 61,069.90	$ 58,139.15	$ 3,277.75	$ 347.00

SPEED DEPARTMENT—1913 SUMMARY REPORT.

Class	Amount of Purse	Amount Paid	Entry fees	Net cost	No. of starters
EARLY CLOSING.					
2-year-old trot	$ 500.00	$ 400.00	$ 210.00	$ 190.00	7
3-year-old trot	1,000.00	800.00	420.00	380.00	9
2:30 trot	1,000.00	800.00	580.00	220.00	9
2:20 trot	1,000.00	800.00	440.00	360.00	8
2-year-old pace	500.00	400.00	100.00	300.00	5
3-year-old pace	800.00	600.00	168.00	432.00	4
2:25 pace	1,000.00	800.00	380.00	420.00	5
2:14 pace	1,000.00	800.00	480.00	320.00	8
LATE CLOSING.					
2:25 trot	700.00	560.00	185.50	374.50	7
2:17 trot	700.00	560.00	126.00	434.00	5
2:14 trot	700.00	560.00	126.00	434.00	6
2:10 trot	900.00	720.00	189.00	531.00	7
2:30 pace	500.00	400.00	80.00	320.00	4
2:20 pace	500.00	400.00	75.00	325.00	5
2:17 pace (not raced)	--------	--------	--------	--------	----
2:12 pace	600.00	480.00	108.00	372.00	6
2:09 pace	900.00	720.00	144.00	576.00	5
Free-for-all pace	800.00	640.00	120.00	520.00	5
Team race (pace)	800.00	680.00	72.00	608.00	3
Totals	$ 13,900.00	$ 11,120.00	$ 4,003.50	$ 7,166.50	103

SPEED DEPARTMENT—CONTINUED

Class	Amount of Purse	Amount Paid	Entry Fees	Net Cost	No. of Starters
RUNNING RACES.					
1¼ mile derby	$ 300.00	$ 300.00	$ 35.00	$ 265.00	7
7 furlong dash	150.00	150.00	25.00	115.00	7
6 furlong dash	150.00	150.00	40.00	110.00	8
6 furlong dash	150.00	150.00	40.00	110.00	8
6 furlong dash	150.00	150.00	20.00	130.00	4
5 furlong dash	150.00	150.00	40.00	110.00	8
5 furlong dash	150.00	150.00	30.00	120.00	6
4½ furlong dash (special)	150.00	150.00	40.00	110.00	8
4½ furlong dash (special)	150.00	150.00	35.00	115.00	7
Totals	$ 1,500.00	$ 1,500.00	$ 315.00	$ 1,185.00	63
Totals for harness races	$ 13,900.00	$ 11,120.00	$ 4,003.50	$ 7,116.50	103
Grand totals	$ 15,400.00	$ 12,620.00	$ 4,318.50	$ 8,301.50	166

Treasurer's Receipts:	
Entry fees	$ 4,318.50
Suspensions	135.30
Total receipts speed department	$ 4,453.80

STATEMENT OF INSURANCE IN FORCE ON FAIR GROUND BUILDINGS AND DATE OF EXPIRATION.

	Fire	Tornado	Premium
General form on frame buildings	$ 57,200.00	$ 57,200.00	$ 2,073.50
Brick horse barns	14,500.00	24,500.00	475.00
Brick cattle barns	6,000.00	6,000.00	180.00
Transformer station and contents	2,000.00	1,000.00	54.00
Agricultural building	10,000.00	10,000.00	300.00
Administration building	17,000.00	13,000.00	490.00
Administration building contents	3,000.00	3,000.00	85.00
Stock pavilion	15,000.00	13,500.00	450.00
Machinery hall	----------	15,000.00	75.00
Swine pavilion	----------	15,000.00	60.00
Farm house	1,500.00	1,500.00	15.00
Farm barn	500.00	500.00	5.00
Street car station	----------	2,000.00	12.50
Total insurance	$ 126,700.00	$ 161,200.00	$ 4,275.00

EXPIRATIONS.

1914	$ 45,000.00	$ 53,500.00	$ 1,400.00
1915	17,500.00	17,500.00	525.00
1916	64,200.00	90,200.00	2,350.00
Totals	$ 126,700.00	$ 161,200.00	$ 4,275.00

The rates for the three year period for which all the insurance is written is as follows:

Fire insurance on frame buildings	$30.00 per	$1,000.00	insurance
Tornado insurance on frame buildings	6.25 per	1,000.00	insurance
Fire insurance on permanent buildings	25.00 per	1,000.00	insurance
Tornado insurance on permanent buildings	5.00 per	1,000.00	insurance

The tornado insurance on permanent buildings renewed during the past year has been written for $4.00 per $1,000.00.

Mr. Curtiss moved that the board recommend to Governor Clarke the reappointment of Dr. Geo. M. Chappel as director of the weather and crop service. Seconded by Mr. Legoe. Motion carried.

Mr. Olson moved that the Boys' State Fair camp be continued as a feature of the 1914 fair. Seconded by Mr. Mullen. Motion carried.

Mr. Pearson moved that whenever the secretary of this board receives information that the county superintendent of schools will not take charge of the boys' camp essay contest as desired by the board, upon receipt of such information directly from the superintendent or through failure to reply to the correspondence, that the secretary shall have power to select another person to act as chairman of the committee. Seconded by Olson. Motion carried.

Mr. Reeves moved that the premium list for the school exhibits department be prepared and sent out at a discretionary date so that work may be prepared during the school year. Seconded by Mr. Curtiss. Motion carried.

A committee composed of Judge W. B. Quarton of Algona, C. A. Nelson of Waverly, Wilcox & Stubbs of Des Moines, and others, representing the Iowa State Dairymen's association and exhibitors of dairy cattle at the Iowa State Fair, appeared before the board and asked for better accommodations for the dairy cattle exhibits at the fair.

The board took a recess until five o'clock in order to make a trip over the fair grounds.

Board reconvened at five o'clock.

Mr. P. W. Branton, representing the Chicago House Wrecking Company, and H. W. Byers, appeared before the board asking for a refund of a portion of the amount paid for a concession at the 1913 fair. Hearing was continued until the following day.

Board adjourned until 9:30 a. m. Friday, December 12th.

MEETING OF THE STATE BOARD OF AGRICULTURE.

FRIDAY, DECEMBER 12, 1913.

Board met at 9:30 a. m. with the following members present: Cameron, Olson, Corey, Tribby, Reeves, Curtin, Tow, Legoe, Curtiss, Sheldon, Summers, Mullen and Pike.

Mr. Cyrus A. Tow, new member of the board from the fifth district, was sworn in by B. W. Garrett, clerk of the supreme court.

Minutes of the board meeting of the previous day were read and approved.

Mr. Pike moved that the management of the 1914 state fair be delegated to the executive committee and the elective members of the board. Seconded by Mr. Sheldon. Motion carried.

Mr. Reeves moved that the executive committee be authorized to make the assignment of superintendents for the various departments for the 1914 fair. Seconded by Mr. Legoe. Motion carried.

The secretary read the following list of assignments prepared by the executive committee:

Tickets	C. W. Phillips.
Concessions and Privileges	J. F. Summers.
Live Stock Sanitation	Dr. J. I. Gibson.
Horses, Ponies and Mules	C. F. Curtiss.
Speed	E. J. Curtin.
Cattle	H. L. Pike.
Swine	C. A. Tow.
Sheep	C. H. Tribby.
Poultry	E. L. Beck.
Implements and Machinery	J. P. Mullen.
Agriculture	F. E. Sheldon.
Pantry Stores and Apiary	F. E. Sheldon.
Dairy	W. B. Barney.
Horticulture	E. M. Reeves.
Floriculture	Wesley Greene.
Fine Arts, etc.	T. C. Legoe.
School exhibits	E. C. Bishop.
Babies' Health Contest	Mary T. Watts.
Publicity and Advertising	H. N. Whitney.
Grounds	J. H. Deemer.

Mr. Legoe moved the adoption of the report as read. Seconded by Mr. Mullen. Motion carried.

Mr. Olson moved that T. J. Hudson, Charles Akes and Carl Shields be elected marshals for the 1914 fair at a salary of $45.00 each; they to furnish their own horses and feed for same. Motion seconded and carried.

Mr. Legoe read the following report of the fine arts department:

REPORT OF SUPERINTENDENT OF FINE ARTS DEPARTMENT.

The Exposition Building being a frame building and rather old, should, before another fair, be inspected and necessary repairs should be made before the fair begins; such as fixing up booths and stopping leaks in the roof, and generally going over the building. I wish also to call attention to the fact that said building is wired for electric lights and is also wired to furnish power and day current, and these wires are not put up in good shape and are not safe. There are two different companies who have been putting wires in the building, as I understand it, the state fair management has the building wired for lights and an outside company furnishes the current for power, and these wires cross each other in such a way that they make it extremely dangerous and I believe that the superintendent of grounds should have this matter attended to and these wires all taken down and put up in proper shape before another fair.

As to the matter of concessions, I wish to say that there should be some system established so that people looking for concessions in the buildings at the Iowa State Fair should not be in a position to bargain with superintendents of the different departments, which is now the case to a certain extent. I wish to state farther in regard to concessions, we cannot, in the future, sell as much space to persons who use it for selling purposes, as we have in the past, on account of the fact that a great many more concessions of this kind are being sold in the other building.

I wish to say in regard to exhibits made in the exposition building by merchants and manufacturers, that the past year we have had the best exhibits of this kind that have ever been made in the exposition building, and have had more of them, and one reason why we did not get as much money for concessions this year as we have had in former years was because we sold so much space for exhibits, and, of course, we do not charge as much for exhibit space as for space sold to persons who use the same for selling purposes.

I believe it would be a good plan, and would prevent congestion in the east part of the building, if that center space where we have placed selling concessions (there in the east wing) was torn out and three attractive booths built up, leaving spaces between them so that the people would not have to walk clear around the aisle to get out of the building unless they so desired.

In regard to the exhibits in the fancywork department, will say that they are in good shape and we are getting new and more attractive exhibits each year. However, as far as I am able to learn, the amount of premiums is not always properly adjusted according to the value of the articles exhibited, as they should be; that is, we give say $1.00 premium for an article worth 10c, then again we give a premium of $1.00 for an article worth $10.00, and I think we ought to have an expert go through the books, that is the premium list, and revise the premiums, taking into consideration the value of articles exhibited or the necessary amount of work to be put on same, so that these premiums will be based more to values than they are now.

The china department is in a very fine condition and we have our cases filled and have had this condition for several years. The only thing that would make the china exhibit larger and better would be to make the premiums somewhat larger and furnish more room for the exhibit.

In the painting department we are doing as well as we could expect to do under the present conditions. The facts are that we are not going to get very many fine paintings exhibited at the state fair until such time as you are able to give the exhibit a safer and more fire proof location. However, if you can put this exhibit where it is practically safe from fire, the exhibit will improve in quality and quantity and by giving somewhat better premiums, the Iowa State Fair can have such an exhibit in this class that it will be proud of. It will also balance up better with the other exhibits of the fair.

I wish to say generally in regard to the exhibits made in this department for premiums that if the building was in better condition and if the fire hazard was less we could have much better exhibits for the same money than now. However, until such a time as the Iowa State Fair can and does erect a good permanent building, where the fire hazard is not so great, we cannot expect to do the best that can be done by this department.

For the benefit of any person who may have charge of this department hereafter, I wish to state that we now have arrangements made whereby we can handle exhibits much better than formerly and with less chance of loss of articles. We use the same system they have in the post office for handling mail. We have a frame work made up with compartments enough to make one for each exhibitor and then put the numbers of the exhibitors on the different compartments, and when distribution is made everyone has their articles separated. Of course this applies only to the fancy work department as it would be impossible to handle the other exhibits that way. I wish to say, however, that we use a book and have everyone receipt for their articles before we turn them over to them, that is we have them sign the book. When the entries are made we list each exhibitor's article separately and have same verified by the exhibitor when we receive them, and when we deliver the exhibits we have the exhibitor sign the book in which his articles are listed and stating that he has received same. It is absolutely necessary in this department in order to have good results, in receiving and returning exhibits, to have each exhibitor's number and kind of exhibit scheduled in a book separately. In that way we have no trouble in checking them out at the end of the fair.

We had the entries in our department closed earlier last year than usual so that we would be able to get the exhibits in place by the time the fair opened to the public; heretofore it has been that the exhibits were not delivered, necessarily, until the evening before the fair opened to the public and it was difficult to get them in place in time for the opening; under the new system adopted this year it was much better, and enabled us to do the work with less help, notwithstanding the fact that the fair commencing one day earlier made more time in which we had to employ help.

Wish also to say that leaving the exhibits in the building over night, until the morning after the fair is over, was a much better plan for our department than the old way of carrying everything out on the afternoon of the last day of the fair, and as far as this department is concerned the new method of handling the exhibits and keeping them intact until the day after the fair, is the proper way in which to run this department as to delivery of exhibits.

In the other building it is customary for the fair management to have an orchestra or bands play at stated times during the fair, while in this department nothing of the kind has ever been done; and it seems to me that this department deserves as much attention at least as some of the other departments, and in view of the fact that it practically pays all its premiums and expenses from concession money received, it does seem that it is entitled to more consideration from the managers of the fair.

Respectfully submitted,
T. C. Legoe,
Superintendent.

Mr. Legoe moved that the revision of the premium list for the fine arts department be delegated to the executive committee and the superintendent of the department, and that this department be allowed an increase of not to exceed $500.00 additional for premiums in order to build up the art department. Seconded by Curtiss. Motion carried.

Mr. Mullen made the following report of the machinery department:

REPORT OF SUPERINTENDENT OF IMPLEMENTS AND MACHINERY.

To the Executive Committee and Board of Directors of the Iowa State Fair:

Gentlemen: I wish to report that the relations between the officials of the Machinery Department and the machinery exhibitors of all classes were extremely pleasant and harmonious; that the exhibit as a whole was bigger and better than the previous years. I wish to compliment the executive committee on their action in the removal of the old street car station, which tended to give the machinery exhibit better appearance, and more compact. Also at the arrangements between this department and the executive committee and the department of safety whereby the policing of machinery hall was left in the hands of the superintendent, and the labor saving in cleaning the building and sprinkling it was highly advantageous and successful, and I ask that the same conditions prevail during the coming fair.

The automobile exhibit was not as large as in 1912, but under the circumstances, on account of the friction between the automobile club of Des Moines that existed, the exhibit was very creditable, and I suggest the same conditions, terms and prices that prevailed in 1913 regarding the letting of space per foot for this exhibit remain the same as last year.

The opening of a new ledger which is used as a record of this department, showing a list of the exhibitors alphabetically arranged, the number of tickets and passes given each exhibitor, his location on the grounds, contracts made with them, the number of exhibitor's ticket, and the total receipts, proved to be a very satisfactory and practical arrangement. I also request that the rule authorizing this department to have written contracts with the exhibitors for outside space for the nominal sum of $1.00 per contract be continued.

To give the exhibitors of gasoline engines, who have heretofore exhibited in Power Hall, the opportunity which they have repeatedly asked for in placing their exhibit in close connection or adjacent to the larger machinery exhibit on the southwest of the grounds. And for the further reason that we find it at the present time, under present conditions, a hard matter to sell space in Power Hall. For these reasons I request that Power Hall be removed from its present location and relocated in the southwest part of the grounds, viz., that the building be run east and west and be faced east of what is known as the drug store on the southwest part of the grounds, running east on the south side of the east and west street so that the east end of said building will extend to a point about fifty or seventy-five feet west of a line drawn south from the west side of machinery hall. There will be ample room for this building and it will be desirable location for gasoline engines and other exhibits of small machinery. It will not inconvenience any other exhibitor to any great extent. The building will doubtless need re-shingling, and I also suggest that it be raised from a level with the street from one and a half to two feet. I earnestly request that this suggestion in regard to the removal of this building be accomplished before the opening of the 1914 fair.

Yours very truly,
J. P. Mullen,
Superintendent.

Mr. Summers moved that Mr. Mullen's recommendations be referred to the executive committee with power to act. Seconded by Mr. Reeves. Motion carried.

Mr. Summers made report of the concessions and privileges department and recommended the following changes in that department:

That check stands be provided in the various buildings on the grounds, instead of having but one.

That all machinery exhibits in the northeast part of the grounds be removed to locations in the machinery department.

That the refreshment concession for the amphitheater be run by the fair management.

That better police protection be provided for the concession department office.

That a barber shop be provided under the administration building and the old shop abandoned.

That the tent and awning concession be extended to allow another company to operate on the grounds.

That a paid ticket be provided for helpers to be sold with the team and driver ticket, ticket to be good to pass out and in gates.

That time for settlement of contracts be changed, setting it one day earlier.

That the roll tickets for Midway shows be put up 2,000 in each roll instead of 500, and that each different priced ticket be a different color.

Mr. Curtiss made report of the horse department with recommendations for 1914 as follows:

REPORT OF SUPERINTENDENT OF HORSE DEPARTMENT.

The exhibit in the horse department for the year 1913 was probably the largest and best balanced that has ever been held in the history of the fair. It was more nearly a farm breeders exhibit than ever before. Practically all of the large importers were absent, and the exhibit numbering nearly one thousand head, came from the farms of Iowa and other states, with one exhibit from Canada. There was no state fair held in any state that furnished as large a proportion of the entries in the horse department as the Iowa fair. The exhibit has grown stronger each year in this respect. There were 148 horse exhibitors at the last fair and 107 of them were Iowa farmers. There were 43 Percheron exhibitors, and 30 of them were Iowa farmers.

The Futurity classes for yearling draft stallions and fillies have resulted in greatly strengthening the breeders exhibits from the farms. The Iowa State Fair in co-operation with the Live Stock World of Chicago, was the first to inaugurate this kind of a show. It has since extended to a number of the other leading state fairs, and was this year adopted by the International Live Stock Exposition at Chicago for the first time. It is universally conceded that this has been the means of greatly stimulating the draft horse breeding interests of the middle west.

The light and heavy harness horse show was conceded to be the best ever held at the Iowa State Fair, and probably the best ever held by any state fair taking all breeds and classes into consideration. The addition of the hunters and jumping classes added a feature of marked interest that contributed to the attractiveness of the night show program in the pavilion. The saddle horse show, as usual constituted one of the chief attractions. The entries were large and the competition very keen. The show of Shetland, Welsh, Hackney and other ponies was, as usual, the largest of the season. No fair or exhibition has as large and meritorious an exhibit of ponies as may be seen annually at the Iowa State Fair.

Unfortunately, the live stock pavilion is not large enough to permit of showing more than about one-half of the exhibit during the forenoons, the only time when it is available for the exhibition of the horses. We have been obliged to run from two to four rings outside each forenoon, and a part of the afternoons, in order to complete the work. These outside rings have been conducted without provision for comfortable seating of the audience that wants to see the show, and the benefits of many of the best features of the horse show have been largely lost on account of lack of proper facilities for showing. In order to remedy this, I wish to earnestly recommend that a subway be put under the track near the west end, and a show ring erected in the in-field dirctly across from the grand stand. This can be used for showing harness horses and saddle classes during the forenoons and afternoons when the grand stand is filled, and it will furnish an added attraction to the afternoon race program. The audience in the grand stand by use of the catalogues, and exhibitors' numbers can follow the show of the horse classes in an intelligent manner.

I wish also in this connection to recommend that a turf track just inside of the regular race course be fitted up for steeple chase races. Some steeple chase races can be put on at a moderate expense that will prove to be one of the most attractive features of the afternoon programs.

The new section in the horse barn has been found to be a great convenience and comfort in housing the large exhibit of the horse department. There are some minor features that could be improved. The ventilation is not quite adequate; some additional roof ventilators should be installed. The floors are dusty and the building is not as neat and attractive as it might be. This could be remedied by having the dirt floors leveled and filled where needed early in the spring, and the entire dirt floor surface liberally sprinkled with crude oil. There should be some cement water tanks put in at the hydrants to avoid waste and muddy places when the barn is in use during the fair.

I wish to recommend as new features for the horse department at the coming show, the steeple chase races, a horse shoeing contest, a thousand dollar saddle horse stake, and a new plan and more liberal prizes for the get of sire show. I have outlined the plan for the get of sire show in the proposed classification. If the thousand dollar saddle horse stake is patronized as liberally as we have reason to expect, it will constitute an added attraction of great interest, and will not involve much, if any, new increase in the total premiums paid in the saddle horse classes.

The horse shoeing contest will constitute a unique and entirely new feature in the American show ring. Such contests have been held annually, and with marked benefit in some of the leading live stock shows of Great Britain. Many of the draft horses that are presented for exhibition at the state fair and at the International Live Stock Exposition are poorly shod. Horse exhibitors complain about incompetent horse shoeing service, yet they are helpless in securing better work. It is believed that an annual horse shoeing contest and exhibition, where prizes liberal enough to induce the best horse shoers to enter the competition may be offered and where the public may view the work, the results will be the means of stimulating increased interest and greater skill in this important phase of the horse industry. No such exhibition has ever been held at any American fair so far as I know, at any rate, not in recent years. I recommend that such a contest be established at the Iowa State Fair for 1914.

Mr. Reeves moved that the report and classification for 1914 be referred to the executive committee and the superintendent of the horse department with power to act. Motion seconded and carried.

Mr. Pike moved that the following changes be made in the cattle classification:

Cut out the classes for Grand Champion Steer and Grand Champion Group (Classes 46 and 47).

Cut out classification for Dutch Belted cattle.

Add fourth and fifth premiums in the Brown Swiss and Ayrshire classes, placing these two classes on a par with the Guernseys.

Motion seconded by Mr. Olson and carried.

Mr. Pike moved that Frank Reed Sanders of Mesa, Arizona, be suspended from showing at fairs until settlement is made of amount due this department, and such suspension be reported to the American Association of Fairs and Expositions. Seconded by Mr. Sheldon. Motion carried.

Mr. Sheldon submitted requests from exhibitors for changes in classification in the agricultural department as follows:

SUGGESTED CHANGES IN THE AGRICULTURAL PREMIUM LIST FOR THE NEXT STATE FAIR.

At a meeting of the exhibitors and assistant superintendents held on the 26th day of August, 1913, in the Agricultural building, the following recommendations were made.

In Class 84, field corn, premiums 1504 and 1505 be made equal in amount of money awarded.

In Class 85, sweet corn and pop corn, Class 1530 be made to read "10 ears of White Rice Pop Corn," and a class be added for "10 ears pop corn any other variety."

In Class 86, Grains and Seeds, Class 1536, be changed to large colored oats; that premiums 1539 be taken out of the book; and that a premium for Speltz be added to the list.

In Class No. 87, grass and forage, that there be two classes for blue grass; one for hay and one for seed.

In Class no 88, that 1561 be ripe millet for seed.

In Class 91, vegetable root crops, that the class for onions read one dozen each; that classes 1600, 1601, 1602, 1603, read one-half dozen each.

In Class No. 92, that 1607 read one quart White Navy Beans, shelled.

In class No. 94, that sweepstakes be raised to $30, $25, $20, $15 and $10.

In class No. 95, Individual Farm Exhibit, the Polk county exhibitors ask that they be given $100 for each exhibit to be divided pro rata.

In class No. 110, that No. 1893 be made to read, best 500 lbs., comb honey in solid classes; that in No. 1892 case buckwheat, heartsease or any other dark honey, 24 sections (may be one year old). The premiums in these classes to be $8, $6, and $4.

These recommendations are respectfully submitted to the board for consideration.

Mr. Reeves moved that Mr. Sheldon's report be referred to the executive committee and the superintendent of the department with power to act. Also recommendations for changes in classes for individual farm exhibits and a classification for county exhibits to be put on by the county advisers as outlined in the secretary's report to the board. Motion seconded and carried.

Mr. Curtin moved that the matter of classification, purses, etc., for the speed department be referred to the executive committee and the superintendent of the speed department with power to act. Seconded by Mr. Curtiss. Motion carried.

The report of Mr. Greene, superintendent of the floricultural department, was read and referred to the executive committee and the superintendent of the floricultural department with power to act.

REPORT OF SUPERINTENDENT OF FLORICULTURAL DEPARTMENT.

I can report that the building assigned the department of plants and flowers was the most satisfactory exhibition space the department has used in recent years, and will serve until more space can be assigned or a new building provided. The only objection exhibitors have made is that it is not large enough to show all of the exhibits in best form.

The premiums offered in the department are not yet large enough to induce people living outside of Polk county to make exhibits. I would suggest that $130 more be added to the premiums to strengthen a few of the premiums offered.

Would also suggest that trees, shrubs and bedding plants on the grounds be correctly named so that people visiting the fair would become familiar with the names of the different trees, shrubs and plants used on the grounds.

Respectfully submitted,
WESLEY GREENE,
Superintendent.

Mr. Reeves made report of the horticultural department as follows:

REPORT OF SUPERINTENDENT OF HORTICULTURAL DEPARTMENT.

In reporting the affairs relating to the fruit department at the last fair I can say that it was a decided success and the affairs passed off in good shape. The fruit shown was brought from largely scattered parts of the state so it represented the crop and conditions quite fully. The showing was large; it filled the allotted space and overran into the adjoining space and filled the galleries. Tables had to be crowded in so the best effect could not be obtained. The fruit was sound and the most perfect lot ever shown at the Iowa State Fair. However, the dry season had retarded its development so it did not show as good color as usual. Many of the samples were very small. A small showing of box apples was brought and apples were bought and used facing about 150 boxes. This shows style of pack and does very well under our conditions and at that time of year. We have no large commission firms on whom we can call for a showing of box apples, so the plan adopted seems the only way at present if we are to persevere in teaching the use of the box for fruit. Help was obtained from the college to do the packing. This was efficient and much cheaper than by hiring outside help for this work.

A sorting machine was shown, being shipped from Chicago for this purpose. It proved to be cumbersome and considerable work to run and with the showing made seemed to not be suited to Iowa conditions. In spite of these facts it can be claimed that the showing of the machine will result in enough added interest in the sorting and grading of apples to pay for the time and expense of getting the machine.

The quality and showing of grapes was excellent and quite in contrast to that at the Minnesota fair where it was almost nothing and, as they said, the poorest in years. In plums the showing proved that fruit to be a poor crop although more and better fruit was shown than we had some years ago. For the premiums on ornamental baskets there were ten contestants and the excellent arrangement showed a marked improvement over last year. This premium adds much to the interest of the exhibitors. The ten plate displays of the leading commercial sorts proved a good addition and should be enlarged upon. These should also be arranged on tables separate from other fruits.

Our plan of having each exhibitor place his fruit and look after it during the fair has its strong points and I believe it better suited to Iowa conditions than the plan of taking it from the exhibitor and classifying it as is done at some fairs. The latter method makes work easier for the judge, but that is more than offset by the extra work in arranging. Besides it does away with the valuable feature of having the owner at his tables to instruct and entertain visitors. At the Iowa fair that is a valuable feature and should be retained.

It seems that the time has come when a better setting for the fruit should be provided. Nothing expensive is needed but more good tables should be provided and more room to allow for a proper arrangement and when fruit is placed a draping around the tables should be added. The room in the gallery is not suitable for the fruit and still less for plants. Exhibits not injured by heat and wind will do there, and if the quantity of fruit continues to come it will require half of the building to give the artistic effect that such a department is entitled to. Of course we can get along with what seems best but to keep up with the advance of the times the additional room will be needed.

Liberal premiums on pears have brought out a good showing of this choice fruit and taught growers that some of the best fruits can be grown as well as the standard—the apple.

As to additional premiums, I would suggest the following to be offered at the next fair, about half of which is likely to be called for in any one year:

Make two districts for peaches, the same as plums.

Add $50 on ornamental baskets, making the entire amount $150.

Make the premiums on boxes of apples $5, $3, $2 and $1 on each variety, thus adding $240 to this class, of which perhaps $100 will be claimed.

Make a class of crabs in each of the four districts, which will add about $70 to the offerings.

Make one on class of apples stored for one year, offering, about $9.

Additional plates should be provided as we have been constantly hindered in placing the fruit by this lack.

These in brief are the principal wants of the department for the next campaign, but be it understood, we will grin and be happy with whatever seems best as is the habit of the small boy at Christmas time.

Respectfully,
E. M. REEVES,
Superintendent.

Mr. Sheldon moved that the recommendations in the above report be referred to the executive committee and the superintendent of the department with power to act. Seconded by Mr. Curtin. Motion carried.

Report of M. G. Thornburg, superintendent of the sheep department, was read as follows:

REPORT OF SUPERINTENDENT OF SHEEP DEPARTMENT.

I respectfully submit the report of the sheep department for the Iowa state fair with recommendations for the 1914 show. The sheep exhibit at the Iowa state fair is making a steady increase both in number and in quality. The 1913 show numbered over 500 head with a total value of over $30,000. The three most notable features that helped to make this year's show a success were:

First. The exhibitors were all pleased with the judging and everybody was well satisfied.

Second. The large increase of Iowa flocks, and the improvement in the quality of the Iowa sheep. Mr. McKerrow, who has exhibited sheep at the Iowa state fair longer than any other shepherd, said that the Iowa sheep had increased over eighty per cent in the last three years.

Third. A large increase in the number of fine wool sheep. Ten breeds were represented, owned by twenty-one exhibitors. All classes were well filled except one. In total numbers the breeds ranked as follows:

1. Shropshires.
2. Merino.
3. Oxford.
4. Rambouillet.
5. Southdown.
6. Lincoln.
7. Cotswold.
8. Hampshire.
9. Cheviot.
10. Dorset.

RECOMMENDATIONS FOR THE 1914 FAIR.

I need only mention the need of a new sheep barn, as the board knows the condition of the present pens, and that the sheep show has entirely outgrown its present accommodations.

In regard to the changes in the classification, owing to the large increase of Merinos, I would suggest that the present class No. 55 for Merinos, American, Spanish and Delaines, be changed to "B" type Merinos; also that the Iowa special class for Merinos, American, Spanish and Delaines, be changed to "B" type Merinos, owned and bred in Iowa; and that two new classes for "C" type Merinos be added,—an open class and the Iowa class for this type.

All of the leading state fairs have recognized the two types of Merinos and I feel sure that the fine wool and Merino show will increase more than 50 per cent if this change is made in classification. As the Merino class now stands it is very difficult to judge both the types together and it is unsatisfactory to the exhibitors.

I also recommend that a class for breeders' young flock be added to each of the breed classes, the breeders' young flock to be owned and bred by exhibitor and to consist of one yearling ram, two yearling ewes, and two ewe lambs. This is a class that is found in the premium list of all the state fairs and should be added to ours.

Thanking the board for the courteous treatment they have shown me during the past season as superintendent of the sheep department, I beg to remain,

Very sincerely yours,
MARK G. THORNBURG,
Superintendent.

Mr. Reeves moved that the report and the recommendations be referred to the executive committee and the superintendent of the department with power to act. Motion carried.

Mr. Reeves moved that the matter of Poland China futurity be referred to the executive committee and the superintendent of the swine department with power to act. Motion seconded and carried.

The report of E. C. Bishop, superintendent of school exhibits, was read as follows:

REPORT OF SUPERINTENDENT OF SCHOOL EXHIBITS DEPARTMENT.

I am pleased to submit herewith report of the Educational department of the Iowa State Fair and Exposition for the year 1913.

1. Full report as to premiums offered and premiums awarded and paid appears in the record books of this department on file in the office of the secretary.

2. In the arrangement of the premium list for 1913 there were omitted some of the divisions of school work for which premiums had previously been offered, wherever it appeared that the work called for was not such as had met a response in the way of exhibits. Also in order to arrange to include some lines of work which are up-to-date and in which there is considerable interest we omitted certain classes of school work, believing that premiums offered in newer work would bring better results than in some of the collective exhibits previously called for.

I am much pleased with the results, and would like to see the premium list as offered last year extended for the year 1914. There are one or two lines of work which I would like to see encouraged if it can be done. One is for individual exhibits of manual training work, another is for individual exhibits of corn, potato, poultry, sewing and cooking clubs as carried out by the Boys' and Girls' clubs throughout the state. This could be included to any amount up to a hundred dollars in a way which I believe would create an interest among a great number of young people and school teachers especially, and would result in some exhibits which would be of value to the fair and to the state. If any extension could be made in this line, I shall be pleased to suggest definite arrangement of same so that it will fit into the cooperative government, state and county club work to advantage.

3. The picture gallery brought out a very much greater exhibit of photographs of good school grounds, buildings, equipment, etc., than we ever had before. I should like to see that department continue to next year. I am sure the awakening given last year will result in an extended exhibit without further change in the premium list.

4. Canning work. The demonstrations in the "cold pack", "hot water bath", and "steam pressure" methods of canning fruits and vegetables, methods used by the Iowa Girls' Canning Clubs, were very successful from the standpoint of interest created and as an attraction to state fair visitors. I believe that can be included next year to advantage on one of the porches of the Women's Rest Cottage if the same is turned over to us for school exhibits. The background of the house would protect the stoves used in canning from wind and would offer a frontage for visitors which I believe would enable those doing the work to handle it to better advantage. This would obviate the necessity of a tent. The matter can be easily adjusted when you decide as to just what space will be assigned for the educational exhibit.

5. There are some detail matters in connection with the preparation of the premium list for the state fair that I shall be glad to take up with the secretary at his convenience. I believe that we should arrange as last year to get out an educational department premium list as early as possible in order that the superintendents and teachers may have direc-

tion in the preparation of exhibits during the school year. The assistance and cooperation given by state fair officials and all those concerned in the schools exhibit was most satisfactory in every way, and I want to express my appreciation for the privilege extended and the helpfulness of the board and those concerned in carrying out the regulations of the state fair as applied to the schools exhibit.

Respectfully sumbitted,
E. C. BISHOP,
Superintendent.

Mr. Curtiss moved that the report and recommendations of the superintendent of the school exhibits department be referred to the executive committee with power to act. Seconded by Mr. Curtin. Motion carried.

Mr. Curtin moved that all departments not filing report at this time be referred to the executive committee and the superintendent of the respective departments with power to act. Motion seconded and carried.

Mr. Summers moved that the department bear one half the expense of the college exhibit at the 1914 fair, provided, however, that one half the expense shall not exceed $800.00. Seconded by Mr. Mullen. Motion carried.

The matter of permanent improvements was taken up and considered at length.

Mr. Curtiss moved that the executive committee be authorized to secure plans and bids, and let contract if bids are considered favorable, for one section of the permanent cattle barn, to constitute the southwest corner when the barn is completed. Seconded by Mr. Curtin. Motion carried.

Mr. Curtiss moved that the executive committee and the superintendent of the speed department be authorized to visit other race tracks and get information about designs, and to have plans prepared, secure bids and let contract for paddock. Seconded by Mr. Mullen. Motion carried.

Mr. Legoe and Mr. Mullen were at this time excused from attendance during the remainder of the day.

Board adjourned until 1:00 o'clock p. m.

AFTERNOON SESSION.

Mr. Curtiss moved that the executive committee be authorized to make necessary arrangements for police service at the fair and to secure the state militia for such service if satisfactory arrangements can be made. Seconded by Mr. Sheldon. Motion carried.

Mr. Curtiss moved that the executive committee be authorized to employ a competent man to have charge of the stallion registration division, under the direction of the secretary and the executive committee, and to give his time chiefly to that work, the salary to be fixed by the executive committee and paid from fees in the stallion registration division. Seconded by Mr. Summers. Motion carried.

Mr. Reeves moved that the secretary be authorized to have printed 8,000 copies of the annual report of the stallion registration division, and also the certificates and other printed matter necessary in the conduct of that division, all to be paid from the fees of the stallion registration division. Motion seconded and carried.

Mr. Curtin moved that the executive committee be authorized to receive new bids for four sections of the street car station and let contract if bids are satisfactory. Motion seconded and carried.

Mr. Curtin moved that the matter of coin controlled turnstiles be referred to the executive committee with power to purchase same if in their judgment it is deemed advisable. Seconded by Mr. Sheldon. Motion carried.

Mr. Sheldon moved that the executive committee and Mr. Curtiss proceed to procure estimates and bids to build a subway under the race track, and, if thought best in their judgment, to also build the inside turf track as suggested by Mr. Curtiss. Seconded by Mr. Curtin. Motion carried.

Mr. Curtiss moved that all unfinished business be delegated to the executive committee with power to act. Seconded by Mr. Summers. Motion carried.

The president appointed as committee on per diem and mileage Messrs. Sheldon, Pike and Curtin.

The bond of Treasurer G. S. Gilbertson for $100,000.00 was presented. Mr. Curtin moved that same be approved and placed on file. Motion seconded and carried.

The committee on per diem and mileage made the following report, and on motion of Mr. Reeves, same was adopted and warrants ordered drawn for the respective amounts:

Mr. President: Your committee on per diem and mileage beg to report as follows:

	Days	Rate	Amount	Miles	Amount	Total
No. 11039 C. E. Cameron	6	$ 4.00	$24.00	140	$14.00	$ 38.00
No. 11041 O. A. Olson	6	4.00	24.00	155	15.50	39.50
No. 11042 R. S. Johnston	3	4.00	12.00	158	15.80	27.80
No. 11043 C. W. Phillips	6	4.00	12.00	210	21.00	45.00
No. 11044 E. M. Reeves	6	4.00	12.00	123	12.30	36.30
No. 11045 E. J. Curtin	6	4.00	12.00	195	19.50	43.50
No. 11046 F. M. Wentworth	3	4.00	12.00	60	6.00	18.00
No. 11047 T. C. Legoe	6	4.00	12.00	85	8.50	32.50
No. 11048 C. F. Curtiss	6	4.00	12.00	37	3.70	27.70
No. 11049 F. E. Sheldon	6	4.00	12.00	123	12.30	36.30
No. 11050 J. F. Summers	6	4.00	12.00	160	16.00	40.00
No. 11000 J. P. Mullen	6	4.00	12.00	117	11.70	35.70
No. 11051 H. L. Pike	6	4.00	12.00	206	20.60	44.60
No. 11052 C. H. Tribby	3	4.00	12.00	---	-----	12.00
No. 11053 C. A. Tow	3	4.00	12.00	---	-----	12.00
						$ 488.90

Respectfully submitted,

F. E. SHELDON,
H. L. PIKE,
E. J. CURTIN,
Committee.

Mr. Summers made the following motion: That the executive committee be instructed to write Harris Bros. Company of Chicago, and make them a price for their building, and give them an option of accepting this price or removing their building from the grounds before June 1, 1914, or paying the amount of the concession. Mr. Curtin moved as a substitute that the executive committee and Mr. Summers take the matter up personally with the representative of the company and try to come to an agreement, and if unable to come to an agreement, to proceed according to Mr. Summers' motion. Seconded by Mr. Pike. Substitute carried. (The above refers to the Chicago House Wrecking Company.)

On motion of Mr. Summers the board adjouurned.

EXECUTIVE COMMITTEE MEETING.

JANUARY 8, 9, 10, 1914.

Members present, Cameron, Olson, Corey, and Board member Curtin.

The following superintendents for 1914, were selected in addition to those approved by the board at the annual meeting:

Admissions Department—O. A. Olson, Director in Charge; N. M. McBeath, Superintendent.

Public Safety Department—C. E. Cameron, Director in Charge; Guy E. Logan, Superintendent.

Women and Children's Building—Dr. M. N. Voldeng, Cherokee; General Superintendent.

The committee authorized the secretary and the superintendent of the agricultural department to cooperate with a committee composed of John Coverdale, Fred Hethershaw and Victor Felter to formulate classification and rules for exhibit to be made by county advisers and individual farm exhibitors as approved by the board at the annual meeting and authorized in the secretary's report to the board.

The committeee authorized the appointment of Mr. Earl S. Girton as chief clerk of the division of horse breeding, at $1,500.00 per annum, should he accept the proposition made him by the secretary and Mr. Curtiss.

The committee directed the secretary to ask for bids for printing the 1914 premium list and to let same to the lowest responsible bidder.

The committee granted H. C. Lowery of Nevada and H. P. Wilkinson of Mitchellville the use of the horse barns and stock pavilion on March 10th and 11th for the sum of $50.00 for the purpose of conducting a draft horse sale.

The committee conferred with architect O. O. Smith regarding plans for one section of the cattle barn, subway under the race track, four sections of the street car station, and paddock for race horses.

The architect was instructed to prepare plans and specifications for the subway, the cattle barn, and the addition to the street car station in accordance with plan outlined by the committee.

The committee decided that before proceeding with the plans for the paddock, the committee, Mr. Curtin and the architect should inspect the paddocks at Cleveland, Ohio, and Lexington, Ky., and arranged to do so immediately after the meeting in Chicago on February 17th, 18th and 19th.

The committee and Mr. Curtin arranged to attend the meeting of the Iowa, Nebraska and South Dakota Racing Circuit at Sioux City, February 11th and the congress of the American Trotting Association in Chicago on February 17th, and the attraction meeting in Chicago on February 18th and 19th.

The committee, Mr. Curtin, the architect and the engineer visited the grounds for the purpose of locating the subway under the track. It was agreed to locate same so that the east wall would be 32 feet west of the bleachers and the same to pass under the track at right angles with the track.

The application of Wm. E. Morton, secretary of the Standard Jack and Jennet Registry of America, for recognition of said association as standard by the Iowa Department of Agriculture, with other communications from Dr. A. S. Alexander, president of the National Association of Stallion Registration Boards, and Wayne Dinsmore, secretary of the National Society of Record Associations, was brought to the attention of the committee. The evidence on file showed that the Standard Jack and Jennet Registry has published Vol. I. It has been recognized as standard by the National Association of Stallion Registration Boards, and the secretary of the National Society of Record Associations was of the opinion that the same recognition should be given it as had been given the Tennessee registry book. Therefore, the committee resolved to recognize said book as standard and the secretary of the Iowa Department of Agriculture was directed to add this book to the list recognized by the department and to issue certificates of pure breeding to jacks registered in said book.

The committee held a conference with the following ladies who had interested themselves in the Women and Children's Building and the features to be carried out in the building during the 1914 fair: Mrs. Mary T. Watts, Mrs. Charles Brenton, Mrs. A. M. Deyoe, Mrs. A. E. Kepford, Mrs. O. O. Smith, and Dr. Lenna Means. The following departments and the superintendents to be in charge of same, were decided upon:

General Superintendent of Building—Dr. M. N. Voldeng, Cherokee.
Rural School Department—Mrs. A. M. Deyoe, Des Moines.
Babies' Health Contest—Mrs. Mary T. Watts, Audubon.

Child's Welfare Exhibit—Mrs. Charles Brenton, Dallas Center.
Domestic Science—Miss Neale S. Knowles, Ames.
Art Exhibit—Professor C. A. Cumming, Des Moines.
Day Nursery—Superintendent to be selected.

Mr. W. M. McFadden, secretary of the American Poland China Record, presented to the committee a proposition for a Poland China Futurity for spring and fall pigs at the 1914 fair. The proposition called for an appropriation of $150.00 by the management of the fair and the Poland China Record guarantee said futurities to be worth $600.00. The proposition was accepted by the committee.

The bond of Secretary A. R. Corey for $10,000.00 was approved by President Cameron and filed with the secretary of state.

The committee authorized the purchase of the house and lot of B. A. McKeever located at the southwest corner of the fair grounds, for $625.00 and 1913 taxes, lot 8, block F, Redhead's addition to Grant Park.

The committee authorized the secretary to purchase lot 7, block F, Redhead's addition, for $125.00 and 1913 taxes that are unpaid.

The president announced the appointment of the following standing committees:

Executive—C. E. Cameron, O. A. Olson, A. R. Corey.
Auditing—C. W. Phillips, T. C. Legoe, J. P. Mullen.
Resolutions—E. J. Curtin, C. H. Tribby, F. E. Sheldon.
Powers and Duties of Board—C. E. Cameron, O. A. Olson, A. R. Corey, E. M. Reeves, C. F. Curtiss.
Adulteration of Foods, Seeds and Other Products—R. A. Pearson, Cyrus A. Tow, W. B. Barney.
Noxious Weeds, Fungus Diseases in Grains, Grasses, Plants, etc.—E. M. Reeves, J. F. Summers, John P. Mullen.
Dairying and Dairy Products—W. B. Barney, C. F. Curtiss, J. F. Summers.
Animal Industry—C. F. Curtiss, H. L. Pike, J. I. Gibson.
Legislative—C. E. Cameron, O. A. Olson, A. R. Corey, J. P. Mullen, E. J. Curtin.
Revision of Premium List, Rules and Regulations—C. E. Cameron, A. R. Corey, O. A. Olson, T. C. Legoe, C. F. Curtiss, H. L. Pike.

Mr. H. C. Beard, chairman of the highway commission, appeared before the committee and made the following proposition for building a strip of concrete road upon the state fair grounds:

The commission will furnish the engineer to do the surveying, laying out the road and furnish plans and specifications for same; also the concrete mixer and other necessary tools and a man in charge of mixer. Commission will also furnish men to supervise work and will keep complete data on cost of construction of road.

The committee conferred with Governor Clarke and Adjutant General Logan relative to the latter serving as superintendent of public safety department of the state fair and utilizing the National Guard to police the grounds.

The committee received assurance that the Governor had it within his power to call out the militia for this duty, and General Logan indicated a willingess to serve in this capacity and agreed to take up the matter with the guard at an early date and give the committee his decision.

The committee conferred with Attorney General Cosson and Railroad Commissioner Thorne relative to the appeal of the case concerning reduced rates to the state fair. The committee was informed that an appeal would be prepared and filed at an early date.

EXECUTIVE COMMITTEE MEETING.

JANUARY 27, 28, 29, 1914.

Committee met with Cameron, Olson and Corey present.

In accordance with the action of the board, the committee authorized the purchase of coin controlled turnstiles for all outside gates and the sale of the old turnstiles at $50.00 each.

Committee authorized placing $10,000 tornado insurance on Grand Stand at $9.00 per annum for a three year period.

Committee decided to dispense with the fifty cent entrance fee in the boys' judging contest and the $50.00 special prize offered to party or association inducing the largest number of boys to enter the contest.

Committee decided to have the boys' entering the contest for the Boys' Camp write essays on the subject "The Ideal Farm," and authorized the publication of 10,000 circulars giving details of contest.

The committee with Architect O. O. Smith went over the plans for the cattle barn, subway under race track, addition to street car station and plan for walks and street forming approach to the Women and Children's Building, and authorized the architect to complete plans and specifications and advertise for bids to be opened on March 4th.

The President instructed the Secretary to notify all members of the board that there will be a full meeting of the board on March 5th to approve the letting of contracts for improvements to be made at the grounds during 1914 and to transact such other business as may be brought to the attention of the board.

Committee authorized the purchase of Lots 21 and 24, Block E, Redhead's addition to Grant Park, for $350.00.

Committee inspected the property of Theo. Flint, located on Lots 3 and 4, Block F, Redhead's Addition, and authorized the secretary to offer Mr. Flint $1,000.00 for the two lots and improvements thereon, or $600.00 for the lots and Mr. Flint remove all improvements.

SPECIAL COMMITTEE MEETING.

SIOUX CITY, IOWA, FEBRUARY 11, 1914.

Members present: Cameron, Olson, Curtin and Mullen.

The purpose of the meeting was to arrange the program for the Iowa, Nebraska and South Dakota circuit, as reported by the secretary.

On motion of Morton, seconded by Curtin, the circuit was to have four $1,000 early closing events as follows: 2:30 trot; 2:20 trot; 2:25 pace, and 2:14 pace. Entrance fee one per cent (1%) of purse, payable May 15, 1914. Positively no entry will be accepted unless accompanied by cash. Seven per cent (7%) of the purse will be deducted from money winner. Any entry failing to declare out on or before August 10, 1914, and which does not start, will be held for one per cent (1%) of purse additional.

The other early closing events were adopted as follows:

Two year old trot; two year old pace; three year old trot; three year old pace.

Entries to late closing events to close as follows: Iowa, August 10th; Nebraska, August 17th; South Dakota, August 24th; Sioux City, September 1st. The records that day no bar.

On motion of Cameron, seconded by Curtin, the secretary was directed to place the circuit "ad" in the "Horse Review", "Spirit of the West", "Western Horseman" and "The Horseman", Chicago, the four (4) weeks immediately preceding the date of the closing of the early events May 15th. The rules of the American Trotting Association to govern, and the point system.

On motion of Curtin, seconded by Morton, W. R. Mellor was elected president of the Circuit Association for the ensuing year, and C. M. McIlvaine, secretary.

As to the class races the different societies would adopt that which would be the best for their respective places.

On motion of Curtin seconded by Cameron, the entry fee on the class races was to be three per cent (3%) with five per cent (5%) deducted from money winners, with the following addition: One-half entrance fee refunded to starters finishing the race inside the flag and outside the money.

Meeting adjourned.

SPECIAL COMMITTEE MEETING, AUDITORIUM HOTEL, CHICAGO, FEB. 17TH, 18TH, 19TH.

FEBRUARY 17TH.

Members present, Cameron, Olson, Corey and Curtin.

At nine a. m. the committee attended a meeting of the Great Western Circuit and were assigned dates in this circuit. The committee also agreed to pay the regular dues for advertising the circuit, amounting to $90.00.

At twelve o'clock noon, the committee attended the meeting of the 12th Biennial Congress of the American Trotting Association.

FEBRUARY 18TH AND 19TH.

Members present: Cameron, Corey, Curtin and Summers.

The committee attended the meeting of the Western Fairs for the purpose of considering propositions from the various booking agencies and free attraction people to furnish music and attractions for the 1914 Iowa State Fair.

The committee closed contract with Patrick Conway for his forty (40) piece band, which includes a mixed quartet, for a period of seven (7) days, beginning Friday, August 28th and closing September 3d, at twenty-five hundred dollars ($2500.00).

The committee also closed contract for Dubrock's Hippodrome to furnish six (6) events to be put on in front of the amphitheater on the race track for the full period of the fair for the sum of thirteen hundred and fifty dollars ($1350.00).

The committee also closed contract with "The World At Home" to furnish eight (8) high class shows and two riding devices to take the place of the midway feature of recent state fairs. The percentage to be 75 and 25.

MEETING OF BOARD OF AGRICULTURE.

THURSDAY, MARCH 5, 1914.

Board convened at ten o'clock a. m. with the following members present: Cameron, Olson, Corey, Tribby, Phillips, Reeves, Curtin, Tow, Curtiss, Mullen and Pike.

Minutes of the meeting of the board on December 12th and subsequent committee meetings were read and approved.

The board discussed at length the following proposed improvements for the year 1914 as presented by the secretary.

ESTIMATE OF IMPROVEMENTS FOR 1914.

Finishing Women and Children's building	$ 5,000.00
Walks from Rock Island to Women and Children's building	1,750.00
Additional land, southwest corner of the grounds	2,650.00
New entrance and 160 feet storm sewer, southwest corner grounds	1,000.00
Repairs to swine pavilion, administration building, roofs	3,850.00
Fourteen cash turn stiles	1,300.00
Section brick cattle barn	5,430.00
Addition to street car entrance	2,600.00
Subway under tracks	6,043.00
Paddock for race horses	10,000.00
One hundred lawn seats	190.00
New fence east of camp grounds (150 rods)	750.00
Moving and new roof on power hall	2,000.00
Miscellaneous improvements by superintendent of grounds, including such items as painting roofs on agricultural and administration buildings, painting structural steel work in swine pavilion and grand stand, building ten booths in agricultural building for county exhibits, cinder hauling and work on streets and other miscellaneous improvements	3,500.00
Total improvements	$ 46,063.00
Balance on hand December 1, 1913	18,500.00
Total anticipated	$ 27,563.00

Mr. Curtin moved that the estimate of repairs and improvements submitted by the executive committee and outlined by the secretary be approved, and if in the discretion of the executive committee any of the repairs can be held off until after the fair, they have authority to do so. Seconded by Mr. Phillips. Motion carried.

The matter of auto races for the fair was considered. The propositions from Mr. Moross and Mr. Sloan to put on races were read by the secretary.

Mr. Mullen moved that the stock parade and auto polo be held on Thursday evening, September 3d, in addition to the regular night show, and that the auto races be put on on Friday afternoon, September 4th, and the dates of the fair to be August 26th to September 4th; live stock to be released Friday, September 4th at twelve o'clock noon, and all other exhibits and concessions to remain in place until 4 o'clock p. m. Friday, September 4th, unless otherwise provided. Seconded by Mr. Phillips. Motion carried.

On motion the board adjourned until 1:30 p. m.

AFTERNOON SESSION.

Board met at 1:30 p. m. pursuant to adjournment, with members present as at the morning session.

The matter of erecting a monument or tablet to mark the place of holding the first Iowa State Fair was discussed. The secretary was instructed to confer with the attorney general and ascertain whether or not the funds of the fair could be appropriated for such purpose.

The secretary read the bids received for improvements on March 4th as follows:

Name of Bidder	Side wall per square ft.	Floors per square ft.
F. Ferrin & Son	.099	$ .07
Akin & Flutter	.10	.09
Louis J. Johnson & J. R. Potts	* .08⅞	.06¾
Lytton Construction Co.	.10½	.06½
Henry D. O'Donnell	.09½	.07
J. E. Lovejoy	----	.08
Koss Construction Co.	.10½	.09
W. F. Mitchell	.11½	.09
Geo. M. King	.10.73	.0788
Potts Bros.	.09½	.07½
Jas. Maine & Sons Co.	.13	.10
B. J. Sweet	.14.3	.11.4

*And 25c per cubic yard for all grading necessary.

Name of Bidder	Cattle barn	Street car station	Subway under track	Alternate bid on subway
J. E. Lovejoy	$ 5,430.00			
Koss Construction Co.			$ 8,367.00	$ 7,461.00
W. F. Mitchell			10,997.20	
J. W. Turner Imp. Co.			9,159.00	8,768.00
Kucharo & Company	9,280.00			
Chas. Weitz & Sons	5,932.00	$ 3,267.00	7,323.00	6,323.00
Capital City Const. Co.			11,180.00	9,600.00
Jas. Horrabin			8,429.00	7,930.00
L. H. Hanson	5,587.00		9,980.00	9,324.00
Des Moines Bridge & Iron Works		2,624.00		
The Shorthill Co.		2,600.00		
H. M. Lewis	6,623.00			
Jas. Maine & Sons Co.	7,780.00		10,850.00	10,700.00
Des Moines Engineering & C. Co.			6,743.00	6,043.00
W. H. Brereton	6,868.00			
Arthur H. Newman	6,373.00			
B. J. Sweet			7,425.00	7,200.00
J. B. McGorrisk	6,800.00			
Faris Abramson Const. Co.			13,745.00	13,300.00

Mr. Curtin moved that the executive committee be instructed to take up the matter of letting the contracts, and if, in their judgment it is not deemed advisable to let contract to the lowest bidder, to take the bid of the next lowest responsible bidder. Seconded by Mr. Mullen. Motion carried.

The revision of classification for the premium list was considered and the following new classifications discussed:

HORSE DEPARTMENT.

INCREASES.

Percheron, filly three and under four, increase		$ 17.00
Percheron, filly two and under three, increase		17.00
Percheron, get of stallion, increase		120.00
		$ 154.00
Clydesdale, same changes as above		154.00
Shire, same changes as above		154.00
Belgian, same changes as above		154.00
Suffolk Punch, new class		1,099.00
Runabouts, two fifth premiums, $10.00 each		20.00
Ladies turnouts, 2 fifth premiums, $5.00 each		10.00
High steppers and park horses, new class, stallion, mare or gelding, and height, horse alone to be considered: $50, $50, $30, $20, $10	$ 150.00	
Four additional fifth premiums, $10.00 each	40.00	
		190.00
Gig horses, 2 fifth premiums, $10.00 each		20.00
Tandems, new class, tandem teams, any size, horses alone to be considered: $50, $40, $30, $20, $10	$ 150.00	
Two additional fifth premiums, $10.00 each	20.00	
		$ 170.00
Saddle horses, 1 additional fifth premium		10.00
Saddle horse stake		1,000.00
Hunters and high jumpers, additional for steeple chase classes		760.00
Welsh ponies, increase		149.00
Horse shoeing contest		70.00
Total increase		$ 4,114.00

DECREASES.

Brougham horses, class cut out	$ 200.00	
[illegible]	[illegible]	
Hackney ponies and others	40.00	
[illegible]	[illegible]	
[illegible]		[illegible]
[illegible]		[illegible]

CATTLE DEPARTMENT.

INCREASES.

[illegible]

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
Total [illegible]	[illegible]

DECREASES.

[illegible]	[illegible]
Dutch Belted, class cut out	547.00
[illegible]	[illegible]
Grand Champion Group, class cut out	75.00
[illegible]	[illegible]
Total increase	631.00
[illegible]	[illegible]

SWINE DEPARTMENT.

[illegible] Poland China [illegible]	[illegible]

SHEEP DEPARTMENT.

INCREASES.

[illegible] each division, making two additional classes.

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

DECREASES.

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

[illegible]

AGRICULTURAL DEPARTMENT.

INCREASES.

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
Net increase	[illegible]

PANTRY, DOMESTIC, HONEY, BEES, ETC.

Honey and Bees	[illegible]
Corn bread class	[illegible]
Increase	[illegible]

HORTICULTURAL DEPARTMENT.

Increase box apples	[illegible]
New class crab apples	[illegible]
Increase peaches	21.00
Increase ornamental baskets	[illegible]
Total increase	[illegible]

FLORICULTURAL DEPARTMENT.

Increase in all classes	130.00

SCHOOL EXHIBITS.

Increase in all classes	[illegible]

SUMMARY OF TOTAL PREMIUMS OFFERED AT THE IOWA STATE FAIR AND EXPOSITION, 1914, SHOWING INCREASES OVER THOSE OFFERED IN 1913.

	Offered by Department 1914	Offered by Department 1914	Increase by Department	Decrease by Department
Horses	$ 19,105.00	$ [illegible]	$ [illegible]	
Speed	15,900.00	15,700.00	200.00	
Cattle	12,294.00	12,512.00		$ 218.00
Swine	4,180.00	4,305.00		125.00
Sheep	3,373.00	2,788.00	[illegible]	
Poultry	2,233.00	2,101.00	132.00	
Agriculture	6,227.00	4,201.00	2,026.00	
Pantry and Domestic	846.00	828.00	15.00	
Apiary	417.00	411.00	6.00	
Dairy	697.00	697.00		
Horticulture	2,258.50	1,865.50	393.00	
Floriculture	1,600.00	1,470.00	130.00	
Textile, China, etc.	1,322.50	1,862.50		[illegible]
Work of Children	72.50	170.50		98.00
School exhibits	1,073.00	968.00	105.00	
Baby health contest	300.00	304.00		4.00
Scholarships	600.00	650.00		[illegible]
College exhibits	800.00	800.00		
Art department	1,000.00		1,000.00	
Total	$ 74,298.50	$ 66,919.00	8,414.50	$ 1,035.00

Mr. Mullen moved that the revision of the premium list as outlined be approved. Seconded by Mr. Tribby. Motion carried.

The matter of offering prizes for farm crops was discussed; crops to consist of the best ten acres of corn, best ten acres of alfalfa, and best ten acres of oats; the state fair to offer $1000.00 and the five railroads crossing the state, i. e., Chicago Northwestern, Chicago, Milwaukee and St. Paul, Illinois Central, Chicago, Rock

Island and Pacific, and the Chicago, Burlington and Quincy; to be asked to contribute $1000.00 each. Mr. Curtiss moved that the president appoint a committee to take the matter up with the railroads, the president to be a member of the committee, and that the fair appropriate $1000.00 provided the railroads would come in on the basis of $1000.00 each, and that the details be worked out later. Seconded by Olson. Motion carried.

The advertising budget for the 1914 fair as follows was considered:

COST OF ADVERTISING 1913 FAIR AND ADVERTISING BUDGET FOR 1914 FAIR.

	Cost 1913	Budget 1914
Country weekly papers, 481–500	$ 2,916.18	$ 3,000.00
Plates for weekly papers, 481–500	760.33	775.00
Daily papers outside of Des Moines	226.05	350.00
Miscellaneous papers and magazines	168.25	150.00
Des Moines daily papers	1,339.18	1,200.00
Agricultural and live stock papers	1,178.45	1,200.00
Horse papers and speed program	627.17	625.00
H. N. Whitney, five month's salary	833.30	833.30
Minnie Truax, five months salary	290.00	375.00
Extra reporters during the fair	98.15	100.00
Printing five issues "Greater Iowa"	364.40	475.00
Postage on same and 10,000 Heralds	114.79	130.00
Hangers	505.00	1,000.00
Monthly calendars	136.10	75.00
125,000 two-color, eight-page Heralds	275.00	300.00
Outdoor signs	157.50	175.00
County distribution, advertising matter	788.90	750.00
Billboard service and date sheets	335.70	300.00
Street car advertising	87.15	90.00
Photos	291.50	175.00
Cuts and electros	119.52	125.00
Daily and band concert programs	81.50	85.00
Trip on jobber's train	37.50	37.50
Gummed stickers	30.17	55.00
Miscellaneous advertising items	56.55	119.20
Totals	$ 11,818.34	$ 12,500.00

Mr. Curtin moved that the budget be adopted. Seconded by Mr. Mullen. Motion carried.

The president appointed as committee on per diem and mileage Messrs. Pike, Olson and Mullen.

The committee on per diem and mileage made the following report which, upon motion of Mr. Reeves, was adopted and warrants ordered drawn for the respective amounts.

Mr. President: Your committee on per diem and mileage beg to report as follows:

		Days	Rate	Amount	Miles	Amount	Total
11158	C. E. Cameron	5	$ 4.00	$20.00	140	$14.00	$ 34.00
11159	O. A. Olson	5	4.00	20.00	155	15.50	35.50
11160	C. H. Tribby	3	4.00	12.00	144	14.40	26.40
11161	C. W. Phillips	3	4.00	12.00	210	21.00	33.00
11162	Elmer M. Reeves	3	4.00	12.00	123	12.30	24.30
11163	E. J. Curtin	4	4.00	16.00	195	19.50	35.50
11164	Cyrus A. Tow	3	4.00	12.00	112	11.20	23.20
11165	Chas. F. Curtiss	3	4.00	12.00	37	3.70	15.70
11166	Jno. P. Mullin	4	4.00	16.00	117	11.70	27.70
11167	H. L. Pike	3	4.00	12.00	206	20.60	32.60

Respectfully submitted,

J. P. MULLEN,
O. A. OLSON,
H. L. PIKE.

On motion the board adjourned.

EXECUTIVE COMMITTEE MEETING.

MARCH 6, 1914.

Members present: Cameron, Olson and Corey, also board member Curtin.

The committee took up the matter of letting contracts in accordance with resolution of board.

Committee required contract bond for 25 per cent of contract on each job.

Contracts were let as follows to the lowest bidders:

Cattle barn—J. E. Lovejoy	$ 5,430.00
Street car station—The Shorthill Co.	2,600.00
Subway—On revised plan—Des Moines Eng. & Const. Co.	6,043.00

The lowest combination bid for cement walks and floors, which was made by the firm of Louis J. Johnson and J. R. Potts, was accepted. Their bid was 8⅞c for walks and 6¾c for floors.

Arrangements were made for a committee meeting with Dr. Voldeng and the superintendents of the various departments of the Women and Children's building, on March 18th.

The committee with architect, visited the grounds for the purpose of definitely locating the subway.

The committee and Mr. Curtin went over sketch for paddock, making a number of suggestions and directed the architect to proceed with plan as outlined.

The committee authorized the secretary and superintendents of grounds to let contract at once for building storm sewer from cement bridge south of track to draw gate bridge so that dirt from [illegible] may be used for [illegible] fill for pad-[illegible]

The committee and Mr. Curtin formulated speed program and conditions governing same. Program to consist of nineteen harness and seven running races; $15,900 offered in prizes.

The committee adopted budget for advertising speed program in the horse papers. Budget to be approximately the same as last year. Not to exceed $625.00 exclusive of the futurity advertising.

The following bids were received for printing 15,000 copies of the premium list in accordance with specifications furnished each bidder.

BIDS ON PRINTING PREMIUM LIST, IOWA STATE FAIR, 1914, FIFTEEN THOUSAND COPIES.

[illegible]	[illegible]	[illegible]	[illegible]
[illegible] Co.	$ [illegible]		
[illegible]	[illegible]	$ 49.78	$ [illegible]
[illegible]	1,100.00	35.00	
[illegible] Co.	995.00	31.20	
[illegible]	1,190.00	72.00	
[illegible]	[illegible]	[illegible]	
[illegible]	907.20	48.00	

The Purcell Printing Company being the lowest bidder, was, therefore, awarded the contract.

EXECUTIVE COMMITTEE MEETING.

MARCH 18, 19, 20, 1914.

Committee met with Cameron, Olson and Corey present.

Committee met with Dr. Voldeng, superintendent of the Women and Children's building, Mrs. Dwyer, Dr. Lenna Meanes and other ladies interested in the various departments of the building. They discussed plans for managing the building and the exhibits to be made.

The committee decided [illegible] of Public Health and ask Dr. G. H. Sumner, secretary of the State Board of Health, to act as superintendent of same.

The committee also decided to adopt the score card recommended by the American Medical Association for the baby health contest and to employ six paid judges in this department.

The committee decided to assign the old art building for school exhibits at the 1914 fair and the old woman's rest cottage, to be known as the Boys' and Girls' Club Work building, the latter to be used to house the exhibits of boys and girls club work, provided for in the school exhibits premium list, and for demonstrations of home canning clubs and other club work. The building to be under the direction of E. C. Bishop, superintendent school exhibits department.

The committee authorized the secretary to make contract with V. Whittington, secretary of the Des Moines Motor Cycle Racing association for the use of grand stand and track on March 30th, at the usual rental of $100 per day.

The following special days were set for the 1914 fair:

Wednesday and Thursday, August 26-27, Preparation days.
Friday, August 28, Children's day.
Saturday, August 29, Des Moines day.
Sunday, August 30, Music day.
Monday, August 31, Implement Dealer's day.
Tuesday, September 1, Soldiers' and Pioneer's day.
Wednesday, September 2, State day.
Thursday, September 3, Live Stock Parade day.
Friday, September 4, Automobile day.

The proposition of the Thomas D. Murphy company, Red Oak, Iowa, to make a special hanger, 21x30, showing all the perm[illegible] buildings in colors, was accepted. The first 10,000 to cost $1,000. Additional thousands of future orders at the rate of $70 per thousand. The workmanship to be first class and the plates to remain the property of the department of agriculture.

The committee agreed to share the cost of three speed wagons with Minnesota, Wisconsin, Illinois, Oklahoma and Texas [illegible] fairs, to be used in putting on pacing team races at above fairs.

The committee and architect agreed on the following changes in the plan of the Women and Children's building.

Put in additional bracing in roof of porches. Place three steps along about one-half the length of each porch, instead of one step full length to avoid making fill. Put in brick flue in kitchen in north wing of building.

Change material to be used in porch ceiling from plaster to beaded ceiling, same to be given one coat of stain. (Estimated, extra cost with one coat of stain $88.25.)

Put in additinal bracing under roof over domestic science room.

Mr. E. C. Hinshaw, state game warden, was given the use of five or six acres of meadow land east of the game preserve to be used for hatching purposes.

Communications from base ball clubs of the Western league, indicating they would take thirteen of the old turn stiles without chopper boxes at $35 each, were brought to the attention of the committee and the sale was authorized.

A committee representing the Iowa conference of the Seventh Day Adventists asked permission to use the grounds and stock pavilion for their conference May 28th, to June 7th. They were granted the use of the camp grounds without charge, with the strict understanding that they were to do all cleaning up of grounds and pavilion after the meeting, replace all damaged property, pay for water and light used, and reimburse the department for any, expense it may be put to on account of said meeting.

The said conference to be granted the use of the east brick dining hall for the sum of $25, providing they make arrangements with Mr. Gordon for the use of equipment in said dining hall.

The secretary was instructed to draw up contract with Elder A. R. Ogden, president, Nevada, Iowa, covering the above.

The proposition from A. E. Metzger, president, National Association of Civil War Musicians, to furnish a 20 piece drum corp for the entire period of the fair for $300, was accepted and the secretary was instructed to draw up contract.

The committee considered the propositions for night show in front of the grand stand for six nights, presented by C. H. Duffield, representing the Pain's Fireworks Display company and J. Saunders Gordon, general manager of the North American Display Fireworks company of Kansas City.

Contract was made with the Pain company for putting on "Opening the Panama Canal and Uncle Sam's Reception to the World," for six nights, one daylight fireworks display, six circus acts, and ballet of 40 girls for $7,500.

The Western Breeders Sales Company was granted the use of the horse barns and stock pavilion for the purpose of conducting a horse sale on April 14 and 15, for a rental of fifty dollars ($50.00).

IN VACATION.

APRIL 1, 1914.

On account of the resignation of Mr. C. A. Nash, assistant secretary of the department of agriculture, to accept a position as secretary of the North Dakota state fair April 1st, it became necessary for the secretary to select his successor. Mr. Clifford C. Heer was tendered the position at $110 per month and accepted same. The other members of the executive committee were consulted over the phone regarding the appointment of Mr. Heer.

EXECUTIVE COMMITTEE MEETING.

APRIL 14, 15, 16, 17, 1914.

The committee met with Messrs. Cameron, Olson and Corey; also board members Mullen, Curtiss and Tow.

The executive committee, Mr. Mullen and Mr. Turk, superintendent and assistant superintendent respectively of the machinery department, visited the fair grounds to determine the location for Power Hall. It was decided to move same to a location in the southwest corner of the grounds, put on a new shingle roof, and put the building in good repair.

The superintendent was instructed to order 200,000 shingles for Power Hall.

The committee went over the general rules in the premium list and approved changes.

Committee authorized the secretary to co-operate with the Minnesota, Wisconsin and Illinois state fairs in advertising jointly the saddle horse stake and show horse classification in the Saddle and Show Horse Chronicle and the Missouri Stockman, the expense of advertising same not to exceed $100.

Committee instructed the secretary to notify the Klondike Incubator company and the Emerson-Brantingham Implement company, both of Des Moines, to remove their exhibits buildings on or before May 20th.

Superintendent of grounds was instructed to furnish an estimate of the number of posts and rods of fencing necessary to build new fence on east side of camp grounds, and the secretary was authorized to order same.

The request of the Farmers' Grain Dealers' Association of Iowa for tent space on the grounds during the fair was granted.

Committee went over the propositions on file with the secretary from various Iowa bands and agreed to accept the proposition of the Fifty-fourth Infantry band, Clarinda, Iowa, twenty-five pieces, six days, at $790.

Committee and Mr. Curtin went over the plans and specifications for the cooling out paddock. The architect was directed to make a few changes in the plans and specifications and prepare same for bidders. The secretary was directed to advertise for bids on same, to be on file on or before 12 o'clock noon, Tuesday, May 5th.

The secretary and Mr. Curtiss conferred with Mr. Tow relative to judges for the swine department at the 1914 fair. The list was agreed upon and Mr. Tow extended the parties an invitation to do the judging.

The committee agreed that inasmuch as the construction of the subway prevented the horsemen from using the track that the horsemen should not be charged stall rent from April 15th until the track was in shape to be used by them.

EXECUTIVE COMMITTEE MEETING.

MAY 6, 7, 1914.

Committee met with members Cameron, Olson and Corey present. The purpose of the meeting was to receive and open bids on the cooling out paddock and to transact such other business as might be brought to the attention of the committee.

The following bids were received on the cooling out paddock. Deduction No. 1 was for leaving out the low brick walls back of stalls including concrete support beam and substituting wooden panels for same. Deduction No. 2 was for substituting swinging gates in place of folding gates as specified.

BIDS ON COOLING OUT PADDOCK.

		Deductions	
		No 1	No. 2
James Maine & Sons Co., Des Moines, Iowa	$ 9,500.00	$ 215.00	$ 258.00
Wm. J. VanDyke, Des Moines, Iowa	8,975.00	484.00	500.00
Arthur H. Neumann & Co., Des Moines, Iowa	8,448.00	------------	------------
Chas. Weitz Sons, Des Moines, Iowa	8,515.00	256.00	176.00
J. E. Lovejoy, Des Moines, Iowa	8,069.00	250.00	200.00

Mr. J. E. Lovejoy being the lowest bidder, was awarded the contract, and secretary was instructed to execute contract and contract bond for same, the contract to be in accordance with the original plans and specifications and no advantage taken of either deduction for changes in outside walls or gates. A clause was inserted in the contract stating that the gates as specified were to cost $276; if the swining gates were decided upon and substituted the department was to receive credit for the difference in cost.

The secretary was instructed to renew the insurance on the agricultural building expiring on May 12 and 13, 1914.

The secretary was instructed to pay pro rata expense for six pages of advertising in the Implement Trade Journal providing arrangement was made with five other state fairs, each to pay for one page of advertising.

Propositions for an Iowa concert band and an orchestra were brought to the attention of the committee. The committee decided to accept the proposition of T. Fred Henry and his band, seven days, forty pieces, including a vocal soloist, for $1,550. Also to accept the proposition of C. P. Graham for a sixteen-piece orchestra, six days, for $436; and to accept the proposition of P. Conway to play an additional day (Friday, September 4) for $300.

The committee authorized the superintendent of grounds to award contract for moving Power Hall to the southwest portion of the grounds and to place same on blocks, for the sum of $475, to James H. Quinnett of Des Moines.

Committee accepted the proposition of Lawrence Stewart of Des Moines to make a piece of statuary life size of mother and child which shall be acceptable to the committee as fitting for the Women and Children's building, for the sum of $50.

Secretary was instructed to have plans and specifications prepared for screening doors, windows and openings on the second story porch of the Women and Children's building, and to receive bids for same on May 16th.

The committee and architect Smith visited the fair grounds to ascertain what progress was being made with the contract work. The following items were called to the attention of J. E. Lovejoy, general contractor for the Women's and Children's building.

He was instructed to plaster the ceiling of the model school room, at the estimated cost of $36.

Place four posts to support twenty foot 6x8 purlines over the day nursery, rest room and auditoriums over ten feet in length, with 4x4 back to iron girders, as called for in the specifications and drawings.

Cover all light conduits coming down to switches with wooden strips as instructed by architect.

The superintendent of grounds was instructed to construct a partition along the west row of steel columns in the large room under the auditorium of the Women and Children's building; also to tint the cement floor in this room with red mortar coloring.

The superintendent of grounds was also instructed to lower the outer ends of the north and south approaches to the subway 18 inches. The Des Moines Engineering and Construction company agreed with the architect and the committee to put in the additional concrete on account of the above change in the approaches without additional cost on account of defective work in the division wall.

The committee met with Dr. Voldeng and Dr. Lenna L. Means to discuss matters pertaining to the Women and Children's building and the babies' health department. The committee authorized Dr. Means, medical director of the babies' health contest, to select eight examiners for six days, at $10 per day. The committee also agreed to allow the superintendent of the babies' health contest one assistant, who is also to act as preliminary judge and receive the same compensation as an examiner; two nurses six days at $3.50 per day; two clerks for the scoring committee six days at $2.50 per day, and one stenographer six days at $2.50 per day.

The committee with member C. F. Curtiss visited the grounds on May 7th to determine what should be done about moving the vaudeville stages from the centerfield to the paddock in front of the ampitheater, building a sod track around the inside of the half-mile track for the steeple chase races and hunters and jumpers contest, also a show ring for light harness and saddle horses in the centerfield.

The committee agreed to move the vaudeville stages from the centerfield into the paddock and locate one directly in front of each end section of the ampitheater and close to the fence.

The committee agreed and instructed the superintendent of grounds to level the ground for the sod track around the inside of the half-mile track and to have same seeded at the earliest possible date.

The committee also agreed and instructed the superintendent of grounds to build a show ring in the centerfield directly in front of the amphitheater, the outside dimensions of this ring to be 60x300 feet; also to construct a water hazard and brush jump immediately west of the show ring.

The superintendent of grounds was also instructed to purchase four or five barrels of road oil and to apply same to the aisles of the swine pavilion to determine whether this would be a satisfactory way of keeping down the dust.

It was agreed that the committee should meet again on May 16, 17 and 18 for the purpose of determining the repairs and improvements to be made at the grounds this year.

EXECUTIVE COMMITTEE MEETING.

MAY 16, 17, 18, 1914.

Members present Cameron, Olson, Corey and Director Curtin.

The executive committee in company with Mr. Deemer, Superintendent of grounds, went over the various improvements and repairs which they deemed necessary at this time.

The superintendent of grounds was instructed to proceed with the following improvements and repairs:

Paint the metal roofs of the agricultural building, administration building, and two brick cattle barns.

Paint all steel risers in the grand stand and touch up all rusty patches in the structural steel.

Paint all the structural steel in the swine barn. .

Cut doorway through brick partition in stock room under the east end of amphitheater and put in a counter, so as to provide a place for stocking up boys who sell pop, peanuts, etc., in the grand stand.

Build in dressing rooms under bleachers at each end of the grand stand, in accordance with plans to be worked out by the secretary and the superintendent.

Rebuild the outside fence around Weaver's drug store corner by placing woven wire fence the full height of the posts now in place and by putting cross arms on top of said posts and stringing barbwire between same.

Close up opening all around base of refrigerator in the dairy end of the agricultural building.

Repair meat market by putting in new ceiling and new floor; also make repairs in the ice box and connect up same with drain.

Tint or paint all brick walls in the large art room in the Women and Children's building.

Superintendent was also instructed to examine the flues, boilers, water pipes and sewer connections in the brick dining halls, and to make such necessary repairs as to put all in good condition prior to the opening of the fair.

The committee authorized the secretary to order the following cash turnstiles: three 25c and six 50c at $110 each, and five convertible cash turnstiles that will operate with either 25c or 50c pieces at $135 each, from H. V. Bright, Cleveland, Ohio, in accordance with his proposition whereby he agrees to accept the two turnstiles and chopper boxes purchased in 1913, giving us credit for full price, $220.

The secretary was also instructed to write the Chicago House Wrecking company and determine what they would take for their building on the fair grounds. In case they ask the department for a proposition, we offer them not to exceed $400 cash for the building.

The secretary was instructed to have a large sign painted on the south side of the swine judging pavilion to read as follows: IOWA STATE FAIR AND EXPOSITION GROUNDS.

The secretary was authorized to let contract to Louis J. Johnson and J. R. Potts for putting in the four inch floor in the street car station and for the four inch walk leading up to the station, at .08⅞c per square foot.

The committee with Architect Smith went over a number of propositions relative to the Women and Children's building and decided upon the following:

Mr. Lovejoy, contractor, was instructed to place sub floor and risers one thickness of two pound Eureka floor deadener over that part of the ampitheater extending over the main auditorium, and plaster, at the estimated cost of $86.50.

Contractor was also instructed to plaster ceiling of the model school room, at an estimated cost of $36. He was also instructed to plaster the ceiling of the large art room under the main auditorium and the ceilings of all rooms in the babies' health contest department, at a cost of 45c per square yard; this to include plaster board and plaster.

Contractor was also notified to remove the porch ceiling that had been stained with dark stain and to replace same with new ceiling and to give all porch ceilings one coat of pure linseed oil instead of one coat of stain.

Contractor was also instructed to leave off canvas covering on the second story porches and to place this canvas on the two enclosed porches on the first floor.

The committee received the following bids for furnishing screens and installing same on all exterior doors and windows, also the second story openings of enclosed porches in accordance with plans and specifications furnished by Architects Smith and Keffer.

BIDS ON SCREENS, WOMEN AND CHILDREN'S BUILDING.

E. T. Burrowes & Co., by Whitlock & Turner, Des Moines	$ 1,330.00
J. E. Lovejoy, Des Moines	1,236.00
Watson Mfg. Co., by E. W. Stone, Des Moines	975.00

The contract was awarded to the Watson Manufacturing company, E. W. Stone agent, at $975.

The committee and Mr. Curtin took up the matter of bidding for the trotting and pacing divisions of the Western Breeders' No. 1 Futurity. Secretary was instructed to submit a bid of $300 for both, or $300 for the trotting division and nothing for the pacing division.

The committee met with Miss Edith M. Robinson, registrar of the Registered Nurses Registry association, and Miss McCarthy, chairman of the committee of Visiting Nurses, for the purpose of making arrangements with the above association to take charge of the day nursery in the Women and Children's building. An agreement was reached whereby the department is to furnish the permanent equipment, such as ice box, stove, chairs, beds and mats, tables, etc.; the nurses' organization to furnish all cooking utensils, bedding and minor supplies. Said association is not to charge to exceed 15c per hour for the care of children, and to receive for their compensation the entire receipts collected for the care of children.

The Secretary was instructed to make up a list of furnishings for the Women and Children's building and to confer with architect Smith relative to light fixtures for this building.

EXECUTIVE COMMITTEE MEETING.

JUNE 5, 6, 1914.

Members present Cameron, Olson, Corey and Director Mullen.

Mr. R. E. Hankinson of De Soto, Kan., met the committee and submitted his proposition for auto polo for the period of seven days. The committee accepted his proposition for a consideration of $1,500, contract calling for fifty minutes play each day of the fair.

Mr. Branton of the Chicago House Wrecking company met with the committee to consider propositions the board had made for buying their exhibits building located on the state fair grounds. The committee made Mr. Branton two propositions as follows: The committee agreed to pay $400 cash for the buildings as soon as the bill of sale to the State Board of Agriculture was made; or to allow said company to occupy the building with their exhibit during the 1914 fair without charge for concession, providing they gave the Board of Agriculture a bill of sale on the building to take effect at the close of the fair.

The committee went over the matter of furnishings for the Women and Children's building with Davidson Bros. and Chase & West. The general style of the furniture to be used in the building was agreed upon and the secretary was instructed to make up a list and secure prices from both firms, both firms agreeing to furnish the furniture at ten per cent above cost to them plus freight; furniture to be delivered at the Women and Children's building, set up and polished, the board to receive credit for special discounts on the order.

The secretary was instructed to place $15,000 combination fire and tornado insurance on the Women and Children's building at $2 per hundred, for the period of three years.

The committee directed J. E. Lovejoy, contractor, to plaster the ceilings as follows: Ceiling of rooms on the main floor of the Women and Children's building; ceiling in the main rest room; ceiling in hallways between the auditorium and school room, and ceiling in all day nursery rooms.

Contractor was also instructed to place deadener felt under the floor in the auditorium; also to put in two cement steps on the east side of the building in place of wooden ones as specified.

The committee authorized Secretary Corey to attend the Winnipeg horse show in company with Mr. Simpson, secretary of the Minnesota state fair, for the purpose of soliciting entries in light harness, hunter and jumper, and steeplechase classes.

Mr. Mullen conferred with a number of automobile dealers of Des Moines relative to making exhibits at the 1914 fair.

The superintendent of grounds was instructed to build in a refreshment stand and stock room at the west end of the amphitheater; also to make changes in the refreshment stand and stock room in the east end of the ampitheater as directed.

The following bids were received for combination curb and gutter and straight 6x15 curb on driveway leading from Rock Island avenue to the Women and Children's building:

	Combined curb and gutter	Straight 6x15 curb
J. R. Potts, Des Moines, Iowa	46c	35c
Lewis J. Johnson, Des Moines, Iowa	44c	22c
Potts Bros., Des Moines, Iowa	40c	16c

The above bids were so much per lineal foot. The committee accepted the bid of Potts Bros. and secretary was instructed to make contract.

EXECUTIVE COMMITTEE MEETING.

JUNE 16, 17, 1914.

Members present Messrs. Cameron, Olson, Corey, also member Curtiss on June 17th.

The committee met for the purpose of purchasing furniture for the Women and Children's building and opera chairs for two sections of the grand stand and in the auditorium for the babies' health contest department.

The committee considered bids from the various firms submitting bids on furniture and decided to place the order for the general furnishing for the Women and Children's building with S. Davidson & Sons of Des Moines, and for the kitchen equipment and hotel range, refrigerator, etc., with Chase & West of Des Moines; both firms having offered to sell furniture on a margin of ten per cent above factory cost plus the freight.

The committee placed an order with the American Seating company for 884 opera chairs for the grandstand at $1.25 each, and 320 opera chairs for the babies' health contest department at $1.15 each.

Committee instructed the superintendent of grounds to build in all necessary kitchen equipment in the kitchen to serve the main dining hall in the Women and Children's building; also to build tables for seating eight persons in the dining room.

Superintendent of grounds was also instructed to build pens in the poultry building for exhibiting flocks; also to arrange lighting for stages in the paddock and to put up fence to guard the stages.

The committee accepted the proposition of the McConnell Boiler & Iron Works to furnish ten five light electroliers for lighting the approach to the Women and Children's building at $20 each and two one light electroliers to be placed at the main entrance of the building at $16.20 each.

The committee accepted the proposition of the Des Moines Tent & Awning company to sell the canvas used for the south side of the automobile show room for $225.

The committee approved the bid of $100 for the pacing division of the Western Horse Breeders' Futurity.

The secretary was directed to buy two coin counters to be used in counting fifty and twenty-five cent pieces taken up from the cash turnstiles. Also one time announcer to be used in the judges' stand.

The secretary was directed to close contract with Hutton's orchestra for six days at $436.

The committee and member Curtiss visited the fair grounds on Wednesday, June 17th, for the purpose of inspecting the steeplechase track and show ring under process of construction in the center field, and to instruct the superintendent of grounds relative to building same and water hurdles, etc.

The committee took up matters relative to the horse show and decided that all attendants in the ring should be in proper livery and judges, ringmaster and clerk in full dress suits.

It was also decided to accept Geo. A. Heyl's proposition of $100 for bringing his six-in-hand pony team to the Iowa state fair this year as an attraction to be used in the afternoons in front of the grandstand and at the evening show in the coliseum.

The secretary was directed to order a sufficient amount of calcium chloride for treating the race track and the show ring in the center field.

The committee accepted the proposition of the Stoner-McCray System to paint the large sign on the south side of the swine judging pavilion for $58.50, and for two large signs on the street car entrance for $70, one half the expense of the latter to be paid by the street car company.

The committee decided to extend President Wilson an invitation to visit the Iowa state fair this fall, and it was also deemed advisable that Mr. Cameron, in company with influential representatives in congress, visit Mr. Wilson in the near future to personally extend this invitation.

AUDITING COMMITTEE MEETING.

JULY 14, 1914.

Auditing committee met with Messrs. Legoe, Phillips and Mullen present. The committee audited all bills that had been paid upon approval of the executive committee since December 1st; also audited and approved all unpaid bills on file with the secretary.

EXECUTIVE COMMITTEE MEETING.

JULY 16, 1914.

Committee met with Cameron, Olson and Corey present.

The Ladies' Poultry association was granted the use of the assembly tent for a poultry day program; they to have the use of the tent on Monday or Thursday as the committee may later decide.

The United Shoe Machinery company of Boston, Mass., was granted the privilege of erecting a black top tent on the fair grounds during the state fair to be used in showing the industrial picture of shoe manufacturing; no admission fee to be charged by said company and no charge for space by the fair management.

The committee decided to race the pacing division of the Western Breeders' Futurity on Tuesday, September 1st, and the trotting division on Thursday, September 3rd.

The committee instructed the secretary to call a meeting of the superintendents of departments in the Women's and Children's building for Friday morning, July 24th, and was further instructed to notify all superintendents and parties interested.

The proposition of Successful Farming to exchange $504 worth of advertising space in Successful Farming for $75 worth of general admission tickets was accepted.

The committee selected Mr. M. W. Keating of Afton, Iowa, to act as superintendent of the camp grounds; he to start work on August 10th and his compensation to be $4 per day; he to have three assistants after August 24th to assist in locating tents and they to receive $2.50 per day.

The committee approved the estimate of $700 for decorating all buildings as submitted by Cressy & Wingate.

The following settlement was made with the Des Moines Engineering & Construction company.

FINAL SETTLEMENT—SUBWAY CONTRACT.

Contract		$ 6,043.00
Extra raising west approach wall at south entrance, as per revised drawing of architect, and estimate filed		235.00
Grooving floors of both approaches as per order of Superintendent		25.00
To six sacks of cement delivered to Supt. of Grounds		2.70
Total due		$ 6,305.70
CREDITS.		
April 21, warrant No. 11208	$1,839.00	
April 23, warrant No. 11233	600.00	
May 2, warrant No. 11251	1,585.00	
May 16, warrant No. 11271	350.00	
June 16, warrant No. 11313	450.00	
July 13, warrant No. 11380	400.00	
Backfill made by Supt. of Grounds	125.00	
Deducted for railing left off and cinders used in foundation	25.00	
Use of team 21 hours at 55c	11.55	
July 13, warrant No. 11390	920.15	
Total payments		$ 6,305.70

The People's Popular Monthly of Des Moines, Iowa, was granted privilege of erecting a building 12x12 feet in Newspaper row.

The committee agreed to meet at Minneapolis on Saturday morning, July 18th, to witness the performance put on by Lincoln Beachey.

The comittee visited the grounds with Mr. Curtiss and Mr. C. E. Perkins of Burlington, Iowa, relative to making final arrangements for the steeplechase course, and for the purpose of instructing the superintendent of grounds how to build water and brush jumps.

The committee also went over numerous improvements to be made at the grounds and instructed the superintendent of grounds as follows:

Place two windows in the south side of barber shop; also whitewash barber shop on the inside.

Build a new cupboard in the secretary's office for taking care of complimentary tickets.

Build fourteen poultry pens for flocks in the south side of the east wing of poultry building. Also build outside pens for egg laying contest.

Build a four foot fence around the two vaudeville stages in the paddock.

Set one twenty-five foot iron post in each of the south corners of the two vaudeville stages for carrying cable on which to place light reflectors. Also place cable on poles along the front of the paddock for carrying light reflectors for lighting race track at night.

Build a judges' stand in the centerfield of the show ring opposite amphitheater.

Rebuild old sheep barn known as "Cattle Barn No. 18" for hospital barn.

Put on hasps and provide locks for all show cases in the pantry stores department in balcony of the agricultural building.

Sheet up brick walls at the north and south ends of the county exhibit booths so they can be burlapped.

Rebuild concession stands in exposition building in accordance with instructions of Mr. Legoe.

Build two platforms for searchlights under the roof at each end of the amphitheater.

Paint nine tables with two coats of white enamel for babies' health contest department, and place measuring board in top of one as instructed.

Place gas pipe guard rail in art room as per instructions.

EXECUTIVE COMMITTEE MEETING.

JULY 24, 25, 1914.

Members present Cameron, Olson and Corey.

The meeting was called for the purpose of holding a conference of the superintendents of the Women and Children's building. The following superintendents and persons interested in the exhibits to be put in the building were present:

Mrs. Charles R. Brenton, child welfare exhibit.
Professor E. E. Lewis, Iowa City, child welfare exihibt.
Professor Robt. E. Reinow, Iowa City, child welfare exhibit.
Professor C. A. Cummings, art exhibit.
Mr. A. M. Deyoe, educational department.
Dr. G. H. Sumner, public health department.
Mrs. Mary T. Watts, babies health contest.
Dr. N. M. Voldeng, superintendent of building.
Miss Mabel Lodge, suffragist.

The conference discussed the various features to be put in the Women and Children's building and the program to be carried out in the auditorium each day of the fair. In the afternoon the committee and all the superintendents visited the fair grounds for the purpose of assigning space, etc.

SATURDAY, JULY 25.

The committee instructed the secretary to extend the committee on retrenchment and reform an invitation to hold their meetings during the period of the fair in the board room in the Administration building.

The committee instructed the superintendent of grounds to employ a night watchman commencing August 3rd; he to go on duty at 1 o'clock p. m. and remain on duty until 12 o'clock midnight.

The committee instructed the superintendent of grounds to enclose the grounds available by the removal of Power Hall and the plot of ground east of where Power Hall stood with a six foot fence and to put in a division fence and streets, so that the grounds could be used for parking automobiles.

Secretary was instructed to make arrangements with the superintendent of public safety for a fire team and three men in the grounds during the period of the fair. Also to make arrangements with the police judge to hold police court at the fair grounds each day of the fair, and to arrange with the attorney general's office to have an assistant attorney general present during sessions of the court to act as prosecutor.

Committee also closed contract with Lincoln Beachey to put on three aeroplane flights each day, to consist of one trick flight, one known as the death dive and upside down flight, and one flight known as the loop-the-loop. Consideration for seven days to be $5,000, and on any day Beachey fails to loop-the-loop and make the death dive he to receive no pay.

Committee also closed contract with the Philharmonic choir of Des Moines for one hundred and fifty voices to put on a sacred concert in the live stock pavilion on Sunday evening, August 30th, for the sum of $500.

Committee also negotiated with F. S. Dusenberg for his three racing cars, one to be driven by Mr. Rickenbacher, who won the three hundred mile automobile race at Sioux City on July 4th.

Committee took up the matter of granting request of the Women's Suffragist association for a room in the Women and Children's building. The committee decided that inasmuch as this building was built for the women and children of the state of Iowa and the plans of the building did not anticipate taking care of organizations of this kind, that their request be not granted.

The secretary was instructed to order 120 rods of 58 inch Elwood fencing for the purpose of enclosing the auto parking ground. Also to order one twenty-five ton car of calcium chloride to be used on the race track and in the aisles of the horse, cattle and swine barns and the aisles of Machinery Hall for keeping down dust. The secretary was also instructed to purchase one car load of spent tan bark to be used in the stock pavilion, carriage section of the horse barn and the cooling out paddock.

The secretary was instructed to purchase one coin counting machine, built for counting twenty-five and fifty cent pieces, of the Johnson Coin Counting company, at $175.

The secretary was instructed to close contract with Siester Bros. for taking care of the manure in the live stock department during the fair.

Secretary was instructed to close contract for an eight-piece orchestra for the Exposition building.

The committee also met with Hal S. Ray, General Passenger Agent of the Rock Island Railway, relative to special trains and shuttle train service. The committee requested that the shuttle trains be put in operation commencing Saturday, August 29th, to September 4th, inclusive; that the special train service commence August 29th and continue until September 4th, Sunday excepted; and that on Sunday all regular week day trains be run.

The committee also instructed the secretary to purchase the following playground equipment of the Fred Medart Mfg. Co., St. Louis:

Six swing outfits, three individual children's slides, and one four board see-saw.

EXECUTIVE COMMITTEE MEETING.

AUGUST 2, 1914.

Members present Cameron, Olson and Corey.

The committee, with Architect O. O. Smith, made a thorough inspection of the Women and Children's building to determine just what required to be completed. Under the specifications and contract Mr. Lovejoy was to tint the walls and the auditorium and in the class room, and he was ordered to proceed with this work without further delay. Various other minor matters were brought to his attention which he was instructed to take care of at once.

The committee went over a number of improvements and repairs that would necessarily have to be made prior to the opening of the fair and instructed the superintendent to proceed with same. Among the principal improvements were the following:

Place a five foot woven wire fence around the lots set aside for the free parking of automobiles.

Place division rails in the stairways leading to the public dining halls under the administration building.

Build in a dressingroom under the main lobby of the administration building opening off of the employe's dining room for the use of the employes of said dining room.

Jefferson Logan was selected as chief janitor of the Administration building and the Women and Children's building. He was instructed to hire four day men, four night men, and two women for toilets and one man for toilets in the Women and Children's building, and four day men, four night men, and one lady to take care of the upstairs rooms, in the Administration building.

Free space was granted to Drake University, the Iowa Highway commission, and the United Shoe Machinery Company for their exhibits.

Secretary was instructed to have shades placed in the public dining room, main floor rest room, both floors of day nursery, and the main auditorium in the Women and Children's building.

IN VACATION.

Prof. C. F. Curtiss, Superintendent of the Horse Department, Charles Rinehart, Don Berry, and Joe McCoy, assistant superintendents of the horse department, arranged the details of the judging program for that department and assigned the stalls on August 7, 8 and 9.

On August 7 Mr. C. H. Tribby, Superintendent of the Sheep Department, and Mr. Mark Thornburg, the assistant superintendent, assigned the pens in the sheep department, and made other arrangements for the sheep show.

On August 8 and 9 Mr. H. L. Pike, Superintendent of the Cattle Department assigned the stalls in the cattle department.

On August 12 Mr. Cyrus A. Tow, Superintendent of the Swine Department assigned the pens in the swine department.

EXECUTIVE COMMITTEE MEETING.

AUGUST 15, 16, 1914.

Committee met with members Cameron, Olson and Corey present.

Mr. F. M. Barnes informed the committee that it would be impossible for him to deliver the professional act known as May

Wirth and Family for the reasons that the horses had been confiscated by the English government in London. The committee authorized the substitution of The Five Gargonis and The Four Portia Sisters in place of the May Wirth act.

The committee approved the order for four steel poles to be placed in front of the vaudeville platform at $18.50 each. Also the steel fencing around the two stages for $304. Also four spot lights to be used in lighting the vaudeville stages at $45 each.

The committee authorized the secretary to issue warrant for $200 on the contract of Cressy & Wingate for decorating buildings.

The committee and Mr. Barnes went over the amusement programs for the afternoon and evening shows in front of the amphitheater and the show in the stock pavilion as outlined by the secretary, and with a few changes, same was approved.

The committee spent August 16th at the fair grounds, going over improvements and repairs with the superintendent of grounds.

Superintendent of grounds was instructed to build a temporary barn for cattle, 42x100, and make provision for thirty-six stalls. Also build two temporary horse barns, one to be 50x120 and one 42x140, stalls to be built as per instructions and tents erected over same.

The committee approved the estimate of the Globe Plumbing Company of $95 for furnishing the following plumbing in the cooling out paddock: One roll rim corner lavatory, and one 18x30 white enamel flat rim sink, trail to floor under each; bath connected to hot and cold water; one sixty gallon galvanized range boiler suspended as directed; one No. 100 International heater connected to boiler by the proper circulation pipe, also to the chimney. All hot and cold water installed complete and connected to service pipe at the floor.

The Des Moines Daily News was granted the privilege of distributing 15,000 or 20,000 State Fair News on the grounds each day of the fair.

EXECUTIVE COMMITTEE MEETING DURING FAIR.

AUGUST 20-SEPTEMBER 5, 1914.

The committee held no regular sessions but handled matters as they came up during the fair.

MEETING OF STATE BOARD OF AGRICULTURE.

FRIDAY, SEPTEMBER 4, 1914.

Board met in the board room of the Administration building at 8:30 p. m. with the following members present: Cameron, Olson, Corey, Gilbertson, Tribby, Phillips, Reeves, Curtin, Tow, Legoe, Curtiss, Sheldon, Summers and Pike.

Mr. Curtin moved that the executive committee lease the fair grounds on Labor Day to the Trades and Labor Assembly and allow them to hold motorcycle races. Seconded by Mr. Sheldon. On roll call the vote was as follows: Yes—Cameron, Gilbertson, Tribby, Phillips, Reeves, Curtin, Tow, Sheldon, Summers and Pike. No—Olson, Corey, Legoe and Curtiss. Motion was declared carried.

Secretary read the pay rolls for the various departments as follows:

11590	A. R. Corey, Secretary's office	$ 894.85
11591	E. C. Bishop, Supt. school exhibits	378.00
11592	C. F. Curtiss, Supt. Horse Department	1,559.50
11593	H. L. Pike, Supt. Cattle Department	1,079.84
11594	F. E. Sheldon, Supt. Agricultural Department	458.50
11595	E. J. Curtin, Supt Speed Department	820.55
11596	A. R. Corey, Sec'y Forage Department	534.00
11597	Wesley Greene, Supt. Floricultural Department	104.00
11598	C. E. Cameron, President Camper's Headquarters	225.25
11599	C. E. Cameron, Pres. Auto Parking and Marshals	290.50
11600	C. W. Phillips, Supt. Ticket Auditing Department	225.00
11601	G. S. Gilbertson, Treasurer, Treasurer's Department	1,369.00
11602	T. C. Legoe, Supt. Exposition Building	503.00
11603	C. H. Tribby, Supt. Sheep Department	90.00
11604	E. L. Beck, Supt. Poultry Department	318.00
11605	Cyrus A. Tow, Supt. Swine Department	440.75
11606	E. M. Reeves, Supt. Horticultural Department	205.54
11607	N. W. McBeath, Supt. Admissions Department	2,667.00
11608	A. R. Corey, Sec'y, railroad fare Boys' Camp	482.49
11609	J. P. Mullen, Supt. Machinery Department	597.10
11610	A. R. Corey, Sec'y, Boys' Camp Leaders	183.00
11711	A. R. Corey, Sec'y, property men	123.10
11737	J. F. Summers, Supt. Concessions Department	1,565.50
11576	H. Robert Heath, Capt. Co. F., 56th Infantry (Guards)	1,425.14
11546-7	C. D. Ross, Capt. Co. F, 55th Infantry (Guards)	1,149.85
11738	W. B. Barney, Supt. Dairy Department	859.24
11632-37	A. R. Corey, Sec'y, Press Bureau and Awards	143.50
11633	M. N. Voldeng, Supt. Women and Children's Building	911.85

Mr. Legoe moved that the pay rolls as read be approved and allowed and the secretary authorized to issue expense warrants and deposit same with the treasurer to the credit of the superintendents' pay roll accounts. Seconded by Mr. Gilbertson. Motion carried.

Mr. Legoe moved that the bills of W. A. Dewey of Milford, Iowa, for $3.20, and James Slater of Emmetsburg, Iowa, for $1.20, for refund on campers' tickets, be allowed and the secretary authorized to issue warrants in payment of same. Seconded by Mr. Reeves. Motion carried.

Secretary presented the claim of H. J. Kahl of Des Moines for refund of $1.50 on grand stand tickets. Mr. Curtin moved that the bill be allowed. Seconded by Mr. Legoe. Motion carried.

Secretary presented bill for 133 meals in the Club Dining Room on State Day amounting to $99.75, and meals for judges and guests during the week amounting to $54.05. Mr. Phillips moved that the bills be allowed. Seconded by Mr. Pike. Motion carried.

Mr. Summers presented the matter of shortage of two cashiers in the Concessions department, one for $8.50 and one for $18.00. Mr. Sheldon moved that Frank Fields be reimbursed the $8.50 lost on score cards. Motion seconded and carried.

Secretary read the following resolution passed at a meeting of Civil War Veterans:

SOLDIERS' REUNION.

Headquarters Tent, State Fair Grounds, September 1, 1914.

WHEREAS, The management of the state fair have this year for the first time granted the civil war veterans, their wives and widows of deceased comrads, free admission for two days instead of one day as heretofore; therefore, be it

Resolved, That we tender to the officers and directory board of the state fair our grateful appreciation of said courtesy.

Motion was made to adopt the above preamble and resolution and same was adopted unanimously by a rising vote.

SAMUEL MAHON,
Chairman.

ATTEST:
V. P. TWOMBLY, Chairman,
Committee on arrangements

The president appointed as committee on per diem and mileage Messrs. Pike, Olson and Phillips.

Mr. Curtin moved that the board express its appreciation to Adjutant General Logan for the efficient service rendered by the National Guard in doing police duty during the State Fair. Seconded by Olson. Motion carried.

Secretary presented the bill of Dan Davis of Omaha for services as special detective, $107.68. Mr. Curtin moved that the bill be allowed. Seconded by Mr. Sheldon. Motion carried.

The bill of Minnie Summers for $75 for stenographic work in the Concessions department was presented, and on motion of Mr. Pike, same was allowed.

The committee on per diem and mileage presented the following report and on motion of Mr. Reeves the report was adopted and the secretary instructed to issue warrants for the respective amounts:

Mr. President: Your committee on per diem and mileage beg to report as follows:

		Days	Rate	Amount	Miles	Amount	Total
11556	C. E. Cameron	22	$ 4.00	$88.00	140	$14.00	$102.00
11557	O. A. Olson	22	4.00	88.00	155	15.50	103.50
11558	C. H. Tribby	22	4.00	88.00	144	14.40	102.40
11559	C. W. Phillips	22	4.00	88.00	210	21.00	109.00
11660	E. M. Reeves	22	4.00	88.00	123	12.30	100.30
11661	E. J. Curtin	22	4.00	88.00	195	19.50	107.50
11662	Cyrus A. Tow	22	4.00	88.00	112	11.20	99.20
11663	T. C. Legoe	22	4.00	88.00	85	8.50	96.50
11664	C. F. Curtiss	22	4.00	88.00	37	3.70	91.70
11665	F. E. Sheldon	22	4.00	88.00	123	12.30	100.30
11666	J. F. Summers	42	4.00	168.00	160	16.00	184.00
11667	J. P. Mullen	22	4.00	88.00	117	11.70	99.70
11668	H. L. Pike	22	4.00	88.00	206	20.60	108.60

Respectfully submitted,

H. L. PIKE,
O. A. OLSON,
C. W. PHILLIPS,
Committee.

Mr. Curtin moved that the secretary and treasurer be allowed $25 each to cover extra expense of board during the period of the fair. Motion seconded and carried.

On motion of Mr. Gilbertson, the board adjourned.

EXECUTIVE COMMITTEE MEETING.

SEPT. 30-OCT. 1, 1914.

Members present, Cameron, Olson and Corey. Committee met for the purpose of approving and allowing bills incurred on account of 1914 fair and to check up and make final settlement on the Women and Children's building, cooling out paddock and cattle barn.

The following settlement made with Johnson & Potts on account of cement work was approved by the committee:

Mr. A. R. Corey:

Dear Sir—The following is the estimate of work done by Potts & Johnson, as measured up to August 10th:

Item	Amount	Unit price	Total
Floor under porches Women and Children's bldg.	5772.6 sq. ft.	$ .06¾	$ 389.65
Floor interior of Women and Children's bldg.	12371.45 sq. ft.	.06¾	385.07
Sidewalk around building above crossing	8149.4 sq. ft.	.08⅞	723.26
Walk from crossing to R. I. Ave. and connections	8259.0 sq. ft.	.08⅞	732.99
Crossings at Women & Children's bldg., upper one	514.4 sq. ft.		
In South Drive	180.0 sq. ft.		
In North Drive	325.0 sq. ft.		
Total	1019.4 sq. ft.	.15	151.81
Steps around Women & Children's bldg.	310.9 sq. ft. (tread)	.45	139.90
Concrete in walls at ends of steps	1.27 cu. yds.	7.00	8.89
Laying about 1.5 cu. yds. of brick wall at steps into toilet	1.50 cu. yds.	7.00	10.50
Station—			
Front of	3828.6 sq. ft.		
North end	2453.0 sq. ft.		
South end	2523.7 sq. ft.		
Total	8805.3 sq. ft.	.08⅞	781.47
Grand Avenue sidewalk	590.9 sq. ft.	.08⅞	52.44
Curb and gutter	12.0 sq. ft.	.50	6.00
Raising wall on east side of subway at south approach			38.00
Removing concrete of south end of Grand Avenue bridge before laying cement walk			12.00
Total			$3,882.98

PAYMENTS.

Warrant No. 11270—1st estimate, May 5, 1914	$ 540.00
Warrant No. 11310—2d estimate, June 16, 1914	600.00
Warrant No. 11315—3d estimate, June 17, 1914	400.00
Warrant No. 11418—4th estimate, August 12, 1914	1,500.00
Warrant No. 11518—Balance, September 7, 1914	842.98
Total	$3,882.98

Respectfully submitted,
JOHN A. BURRIS.

The committee with O. O. Smith, architect, and J. E. Lovejoy, contractor, inspected the cattle barn, cooling out paddock, and Women and Children's building for the purpose of determining whether or not they were completed, in accordance with plans and specifications. Also to agree upon bill of extras on the Women and Children's building submitted by Mr. Lovejoy.

The committee found the cattle barn completed in accordance with plans and specifications with no bill for extras. The following settlement was made:

To contract on cattle barn		$5,430.00
PAYMENTS.		
Warrant No. 11261—1st estimate, May 9, 1914	$1,390.60	
Warrant No. 11312—2d estimate, June 16, 1914	1,381.25	
Warrant No. 11407—3d estimate, July 25, 1914	1,530.00	
Warrant No. 11783—Balance, October 1, 1914	1,128.15	
Total	$5,430.00	

The committee found the cooling out paddock completed in accordance wtih plans and specifications with no bill for extras. The following settlement was made with Mr. Lovejoy:

To contract for cooling out paddock	$8,069.00
PAYMENTS.	
Warant No. 11376—1st estimate, July 9, 1914	$3,336.25
Warrant No. 11453—2d estimate, August 8, 1914	2,517.50
Warrant No. 11647—3d estimate, September 14, 1914	1,500.00
17 rods fencing furnished	19.17
Warrant No. 11647—Balance due October 1, 1914	696.08
Total	$ 8,069.00

The committee found the Women and Children's building comcordance with plans and specifications with no bill for extras. ordered by the committee and architect. The following bill for extras was checked and computed by the committee and architect. The charge for a greater portion of the extras had been agreed upon by contractor and committee and architect, as will be found in minutes of executive committee meetings.

LIST OF EXTRAS ON WOMEN AND CHILDREN'S BUILDING.

4880 ft. 1x6 No. 1 YP fence sheathing used in reinforcing porch roof trusses	$ 122.00
217½ hours carpenter's time on same @ 65c	141.37
Extra iron railing on east porch, 158 ft. 6 in.	136.00
2,500 face brick laid on east porch foundation extra	80.00
527 cu. ft. tile and brick wall on east porch extra	205.13
60 ft. cement steps on each porch @ 50c	30.00
1 extra bracket on east side cornice	12.50
Quoted difference between ⅝x4 YP bead ceiling on porch ceilings and plaster-board and plaster	88.25

2 doors and frames under front steps		25.00
Sub-floor and risers in amphitheater over auditorium with deadening felt as quoted.		86.50
4 flag staffs		32.00
55 ft. double flue from kitchen range and ventilating flue from toilet and kitchen		110.00
Plastering ceilings of rooms in connections with baby health department, ceiling of large room in basement, ceiling of north and south wing first floor, 866 yards @ 45c		389.70
140 ft. iron-girder metal lathed and plastered in exhibition room in basement		14.00
Eureka deadening felt over two thirds of auditorium floor		23.00
84 ft. iron-girder metal-lathed and plastered in day nursery		8.40
Removing stained ceiling on south porch and putting in new ceiling		38.80
Plaster ceiling of school room as per price		36.00
Extra ceilings on Loggias first floor		56.25
2 gates to stairways, south wing		7.50
Tinting school room ceiling		10.50
Tinting auditorium ceiling		48.00
Platform in domestic science room		17.70
Superintendent's office on second floor		26.50
Extra brick wall under north porch, 257 cu. ft. @ 39c		101.39
1,675 faced brick @ $32.00		53.60
2 scuttle holes extra to attic		8.00
Red rosin paper under all floors 31 rolls		27.00
Partitions in men's toilet in basement		60.00
Changing flue in B. H. C. judging room		8.20
Resetting book case in school room		12.00
Cutting hole in wall for moving picture machine		2.00
		$ 2,017.29
Brick wall omitted on north where steps occur to men's toilet	$ 28.60	
Area wall on east omitted	22.50	
Canvas floor in nursery Loggia floor	11.50	62.60
Total extras due		$ 1,954.69

The following settlement was made with Mr. Lovejoy on contract and extras for Women and Children's building:

To contract on Women and Children's Building	$ 65,190.00
Bill of extras	1,954.69
Total	$67,144.69

PAYMENTS.

Warrant No. 10934—1st estimate, October 15, 1913	$15,000.00	
Warrant No. 10983—2d estimate, November 17, 1913	9,270.00	
Warrant No. 11065—3d estimate, December 16, 1913	5,896.00	
Warrant No. 11105—4th estimate, January 16, 1914	4,640.00	
Warrant No. 11171—5th estimate, March 7, 1914	2,640.00	
Warrant No. 11221—6th estimate, April 9, 1914	3,600.00	
Warrant No. 11260—7th estimate, May 9, 1914	6,196.50	
Warrant No. 11311—8th estimate, June 16, 1914	6,885.00	
Warrant No. 11408—9th estimate, July 25, 1914	1,020.00	
Warrant No. 11646—10th estimate, September 14, 1914	8,500.00	63,647.50
Balance due		$ 3,497.19

The committee authorized the secretary to make contract with the Iowa Poultry and Pet Stock association, Des Moines, for use of poultry cooping during winter show, the rental for use of cooping to be $150.

EXECUTIVE COMMITTEE MEETING.

OCT. 12, 13, 14, 1914.

The committee met with members Cameron, Olson, Corey, Curtin, Summers and Curtiss present on October 12th.

The purpose of the meeting was to confer with the program and executive committee of the American Association of Fairs and Expositions which was in session at the Savery Hotel relative to arrangements for the annual meeting in Chicago on December 3d and 4th.

The executive committee met on October 13th and 14th. The committee granted the Western Breeders' Sales Company the use of the horse barns and stock pavilion for the horse sale to be conducted by said company on October 29th, 30th and 31st, for the sum of $50 plus the expense the department would be to in taking up street crossings, cleaning barns, hauling forage, etc.

The secretary brought to the attention of the committee the fact that when all bills for material, expense of fair, etc., were paid there would be a deficit in the treasury of between $11,000 and $20,000. The committee deemed it advisable that there be a full meeting of the board to take care of this matter. President Cameron therefore instructed the secretary to call a full meeting of the board for Tuesday morning, at ten o'clock, October 27th.

MEETING OF STATE BOARD OF AGRICULTURE.

TUESDAY, OCTOBER 27, 1914.

The board met at 1:30 p. m. with President Cameron in the chair. The following members of the board responded to roll call: Cameron, Corey, Tribby, Reeves, Curtin, Tow, Legoe, Sheldon, Summers, Mullen and Pike.

Secretary read the minutes of the board meeting on March 5th and the executive committee meetings up to June 16th and 17th. Mr. Reeves moved that the minutes as read be approved. Seconded by Mr. Legoe. Motion carried.

Secretary presented an itemized statement of receipts and disbursements of the Iowa Department of Agriculture and the Iowa State Fair and Exposition for the period December 1, 1913, to October 24, 1914, of which the following is a summary:

SUMMARY OF RECEIPTS AND DISBURSEMENTS, DECEMBER 1, 1913, TO OCTOBER 24, 1914.

RECEIPTS:			
Cash on hand Dec. 1, 1913			$ 18,505.82
Receipts from other sources than fair			63,721.27
Receipts of fair other than ticket sales		$ 59,104.20	
Receipts from ticket sales		128,718.50	
Total receipts of fair			187,822.90
Grand total receipts			$ 270,049.99
DISBURSEMENTS:			
For other than fair or imp. paid	$ 8,309.67		
For other than fair or imp. unpaid	167.35		
Total other than fair or imp.		$ 8,477.02	
Exp. fair other than prems. paid	$99,428.77		
Exp. fair other than prems. unpaid	5,386.72		
Cash premiums paid	66,118.85		
Total cost of fair		170,934.34	
Permanent improvements, paid	$93,497.18		
Permanent improvements, unpaid	11,666.36		
Total cost of improvements and buildings		105,163.54	
Maintenance of grounds, paid	$ 6,343.69		
Maintenance of grounds, unpaid	392.32		
Total cost of maintenance		6,736.01	
Total disbursements			291,310.91
Total short to date			$ 21,260.92

The matter of taking care of the unpaid bills was discussed by the board members and it was deemed advisable to borrow the money to take care of all claims.

Mr. Curtin offered the following resolution and moved its adoption. Motion seconded by Mr. Mullen:

WHEREAS, The Iowa department of agriculture on account of the 1914 Iowa State Fair is indebted for permanent improvements in a sum in excess of twenty thousand dollars ($20,000.00), be it

Resolved, That the president and secretary be authorized to execute notes to different financial institutions of Des Moines due in ten months, at seven per cent, for amounts aggregating twenty thousand dollars ($20,000.00); said notes to be endorsed by the directors personally and said notes to be paid out of the first receipts of the 1915 fair.

Roll call on the resolution resulted as follows: Yes—Cameron, Corey, Tribby, Reeves, Curtin, Tow, Legoe, Sheldon, Summers, Mullen, Pike (11). No—None. The resolution was declared adopted.

Mr. Summers presented the following resolution and moved its adoption, seconded by Mr. Tribby, and same was unanimously adopted:

Resolved, That the executive committee be authorized to borrow not to exceed five thousand dollars ($5,000.00), or as much thereof as may be necessary, for the purpose of taking care of unpaid bills and current expenses of the Iowa department of agriculture.

The following notes, dated October 27, 1914, due ten months after date, at seven per cent, were endorsed individually by members of the board present:

Valley National Bank, Des Moines	$ 3,500.00
Central State Bank, Des Moines	2,000.00
Central State Bank, Des Moines	2,000.00
Central State Bank, Des Moines	2,000.00
Central State Bank, Des Moines	1,500.00
Iowa Trust & Savings Bank, Des Moines	2,500.00
Iowa Trust & Savings Bank, Des Moines	2,500.00
Des Moines National Bank, Des Moines	4,000.00

Secretary read letters in reply to a letter addressed to horse and cattle breeders sent out by Mr. Curtiss relative to holding a spring stallion and bull show and sale at the fair grounds. Action on the matter was deferred until the annual meeting in December.

The matter of cooperating with the county and district fair managers association in a joint program on December 8th was discussed. Mr. Legoe moved that the department cooperate with the county and district fair managers association in carrying out the program. Seconded by Mr. Pike. Motion carried.

Compensation for the services of Adjutant General Logan, superintendent of public safety during the 1914 fair, was considered. Mr. Reeves moved that General Logan be allowed $100 for his services seconded by Mr. Legoe. Motion carried.

The president appointed as committee on per diem and mileage Messrs. Pike, Tow and Summers.

Mr. Legoe presented a claim of Miss Mary Christensen of Marshalltown, Iowa, for $15 for goods exhibited in the needlework department at the 1914 fair that were lost or misplaced, and expense incurred in making a trip to Des Moines to present the claim. Mr. Tribby moved that Miss Christensen be reimbursed to the amount of $10. Seconded by Mr. Legoe. Motion carried.

Mr. Pike, chairman of the committee on per diem and mileage, presented the following report and moved its adoption; motion seconded and carried:

Mr. President: Your committee on per diem and mileage beg to report as follows:

		Days	Rate	Amount	Miles	Amount	Total
11941	C. E. Cameron	3	$ 4.00	$12.00	140	$14.00	$ 26.00
11942	C. H. Tribby	3	4.00	12.00	144	14.40	26.40
11943	E. M. Reeves	3	4.00	12.00	128	12.80	24.80
11944	E. J. Curtin	3	4.00	12.00	195	19.50	31.50
11945	Cyrus A. Tow	3	4.00	12.00	112	11.20	23.20
11946	T. C. Legoe	3	4.00	12.00	85	8.50	20.50
11947	F. E. Sheldon	3	4.00	12.00	132	12.30	24.30
11948	J. F. Summers	3	4.00	12.00	160	16.00	28.00
11949	John P. Mullen	3	4.00	12.00	117	11.70	23.70
11950	H. L. Pike	3	4.00	12.00	206	20.60	32.60

Respectfully submitted,
H. L. PIKE,
C. A. TOW,
J. F. SUMMERS,
Committee.

On motion of Mr. Summers, the board adjourned.

AUDITING COMMITTEE MEETING.

OCTOBER 27-28, 1914.

Members present Mullen and Legoe, the other member, Mr. Phillips, having passed upon the claims on October 12th and 13th.

The committee approved all bills on file that had been paid by the secretary with approval of the executive committee since the auditing committee meeting on July 14th.

EXECUTIVE COMMITTEE MEETING.

OCTOBER 28-31, 1914.

Members present Cameron, Olson and Corey; also member Curtiss on October 31st.

Committee discussed arrangement of program for annual meeting and decided to invite DeWitt C. King of Chicago to address the meeting as the principal speaker.

The committee discussed the matter of putting on a spring stallion and bull show and sale. It was decided that on account of the condition of the department's finances that nothing further be done until the annual meeting.

The committee went over the unpaid bills on file and decided which should be paid at this time and those that were to be carried over until after the annual meeting.

MEETING OF STATE BOARD OF AGRICULTURE.

THURSDAY, DECEMBER 10, 1914.

Board met at ten o'clock with the following members present: Cameron, Olson, Corey, Tribby, Phillips, Reeves, Curtin, Tow, Legoe, Curtiss, Sheldon, Summers, Mullen and Pike.

Mr. I. S. Mahan of Oklahoma City, Oklahoma, appeared before the board and presented a proposition to erect two riding devices on the state fair grounds, same to be permanent and operated upon a percentage basis.

Secretary read the minutes of the committee and board meetings from June 16-17 to date. Mr. Reeves moved that the minutes as read be approved. Seconded by Mr. Summers. Motion carried.

Mr. Pike moved that the board adjourn sine die. Motion carried.

Mr. Garrett, clerk of the Supreme Court, administered the oath of office to the following newly elected members: Cameron, Olson, Phillips, Curtin, Legoe, Sheldon and Mullen.

Secretary called the roll and the following members responded: Cameron, Olson, Corey, Tribby, Phillips, Reeves, Curtin, Tow, Legoe, Curtiss, Sheldon, Summers, Mullen and Pike.

Mr. W. P. Dawson of Cherokee county and Professor Erwin of the Iowa State Agricultural College appeared before the board relative to classification and premiums for potatoes and suggested making the potato exhibit a part of the horticultural department.

On motion the board adjourned until one o'clock.

AFTERNOON SESSION.

Board convened at 1:30 with members present as at the morning session.

The matter of entering into contract for the two riding devices as presented by Mr. Mahan was discussed by the board, and the individual members of the board expressed themselves in favor of the proposition, providing a suitable location can be selected that will not interfere with any of the proposed permanent buildings to be erected in the future.

Mr. Curtiss moved that Mr. Corey be elected secretary for the ensuing year, his salary to be $2,600 per annuum, until April 23, 1915, and then $3,000 per annum until the next annual meeting of the board. Seconded by Mr. Curtin. Motion carried. Mr. Corey upon being notified of his re-election expressed his appreciation to the board.

Mr. Summers moved that a surety bond of $10,000 be given by the secretary, and that the premium on same ($25) be paid by the Department of Agriculture.

Mr. Curtin moved that Mr. G. S. Gilbertson be elected treasurer for the ensuing year at a salary of $100 and that he give bond in the sum of $100,000. Seconded by Mr. Mullen. Motion carried.

Mr. Mullen moved that the Executive committee be empowered to elect a superintendent of grounds at a salary not to exceed $100 per month, and same privileges as allowed last year. Seconded by Mr. Curtiss. Motion carried.

The secretary read the contract for the two proposed riding devices, section by section. Mr. Curtin moved that the question of entering into contract be left to the Executive committee with power to act along the lines suggested in the discussion by the board. Seconded by Mr. Legoe. Motion carried.

The secretary made the following report and itemized statements covering attendance receipts, etc.:

Gentlemen: In my report to the state agricultural convention I endeavored to cover the exhibit of the state fair and the finances of the fair quite completely.

For your further information I am placing in your hands a number of exhibits, or statements, dealing with the attendance; ticket sales, number of exhibitors and number of animals and articles on exhibition; comparative statements of receipts and disbursements and itemized statements showing cost of the Women and Children's Building; cooling out paddock; cattle barn; subway and street car entrance. The purpose of these statements is to acquaint each member of the board with the details of the various departments of the fair.

The financial statement to the convention takes into consideration only the receipts and disbursements that have been entered on our books. This statement does not take into consideration the unpaid bills on file, amounting to $5,614.32. You will find an itemized statement of these unpaid bills on page 15 of the statement. On page 16 you will find a summary of the receipts and disbursements, taking into consideration all unpaid bills and showing a shortage, November 30th, of $4,645.59. To this amount must be added the $20,000 borrowed on October 27th for settling unpaid bills and balance due on contracts. This makes the total indebtedness of the department at November 30th, $24,645.59. The present condition of our treasury will entirely relieve this board from any further worry as to what improvements should be made another year from any anticipated receipts of the 1915 fair. With average weather during fair week in 1915, and by curtailing expenses of the fair a little, the management should be able to wipe out this indebtedness another year. However, to do this it will be necessary for all to lend a hand and make no improvements from anticipated receipts during the coming year.

The matter of state appropriations for permanent improvements on the grounds another year should have the attention of the board at this meeting. The board should determine just what we are going to ask the legislature for.

If we are going to ask the legislature for an appropriation for a sheep barn and a sewer system for the grounds, I think we should get out a pamphlet showing the condition of our old sheep barns and also use cuts of the new barn which we are asking for.

We should also secure estimates from three or four reliable contractors and determine, as nearly as possible, the cost of this building. We should also make a survey for the sewer system, determine the size of pipe to be used, the depth they are to be laid, and the cost to complete same. I believe if we put the proposition up to the legislature in a businesslike manner, and are united in what we ask for, they will treat us fairly, as they have in the past.

In checking over the payrolls of the various departments, I find there is quite a difference in the amount paid employes during the fair. I think it would be well if there was a committee selected to go over these payrolls and adopt a uniform scale of wages to be paid assistant superintendents and extra help during the fair.

The board should also take some action toward securing the National Draft Horse Breeders' Futurity Show for the next two or three years. The futurity show at the Iowa state fair this year was the last one to be held under our three-year contract with the Chicago Daily Live Stock World for this event.

I would like the opinion of the board as to publishing the detailed financial reports of the various departments, such as the privilege department, speed department, receipts for stall rent in the horse, cattle, swine and sheep departments, in the Year Book, and doing away with publishing a list of the expense and premium warrants issued. The latter is not a source of information to anyone and took up seventy-eight pages in our 1913 Year Book.

I should also like to have the board pass a resolution requesting the executive council to partition off this room, providing private offices for the secretary and superintendent of publicity. This partition could be built about eight feet high and not affect the light in any part of the room. The idea is to have the lower part of the partition of walnut, the same as the other woodwork, and the upper part of ground glass. It is getting more and more difficult to do the work under present conditions, for the reason that your secretary is obliged to meet everyone who comes into the office, whether they are on business or not. (See secretary's report to state agricultural convention for itemized statements.)

Mr. Legoe offered the following resolution:

Resolved, That the executive committee be authorized to borrow, not to exceed $10,000, or as much thereof as may be necessary, for the purpose of taking care of unpaid bills and current expenses of the department of agriculture. Seconded by Mr. Curtin. Motion carried.

Attorney General Cosson conferred with the board relative to the case pending in the District Court of Polk County against Mr. C. E. Cameron and Mr. O. A. Olson for maintaining a nuisance during the 1914 State Fair.

Mr. Curtiss made the following report of the Horse department:

The horse department of the Iowa State Fair in 1914 set a new mark, not only for the Iowa fair, but for all state fairs. There were 142 exhibitors and 1,152 entries. In 1907 there were 84 exhibitors and 472 entries. Even then, it was considered that the Iowa State Fair had a good exhibit in the horse department. There has been a constant increase in the number of exhibitors from Iowa. Most of the exhibitors are Iowa farmers who are raising pure bred horses primarily for farm work.

At the 1914 state fair there were 246 head of Percherons, shown by forty-six exhibitors. Forty of these exhibitors were Iowa breeders. There were 115 Clydesdales, shown by sixteen exhibitors, twelve of whom were Iowa breeders. There were ninety-two head of Shires, shown by fifteen exhibitors, and twelve of the fifteen were from Iowa. There were 175 Belgians, shown by twenty-four exhibitors, and twenty-two of the twenty-four were Iowa breeders and farmers. There were seventy-two draft mares and geldings, shown by twenty-three exhibitors, and twenty out of the twenty-three were Iowa farmers, making a total of 106 Iowa exhibitors of draft horses at the 1914 state fair. This is a record that is not equalled by any other state, and, unquestionably, Iowa owes not a little of her preëminence in horse raising to the magnificent exhibit that is made annually at the Iowa State Fair. The classification offered and the prizes awarded for a number of years have been upon a basis calculated to primarily encourage the development of the horse breeding industry of the state, rather than to encourage the traffic in imported horses from foreign countries. The results obtained have fully justified the wisdom of this policy, and the Iowa breeders are now in a position to take advantage of the unusual opportunities that are presented on account of the disastrous effects of the war upon the horse industry of Great Britain, France, Germany, Belgium and Russia. It is estimated that not less than 150,000 horses will be sold for export from the United States during the first six months of the war's progress, and there is every reason to believe that American farms will be drawn upon for even larger numbers before the war can be terminated and the farms restocked or equipped for agricultural operations. Then it is not improbable that American farms may be called upon to furnish foundation breeding stock to reëstablish the horse breeding industry in some parts of Great Britain and on the continent.

Iowa outranks all other states in the value of its livestock, and horses outrank all other kinds of livestock in this or any other state. The horse product of Iowa surpassed in value on January 1st, or at any given time, the value on hand of any other agricultural product of any state of the Union. Iowa's horses are, therefore, the greatest single agricultural asset in America.

Some marked improvements were made in the horse department during the past year. The concrete subway leading under the track at the east end of the paddock gave access to a new show ring in the infield opposite the grand stand. This provided good facilities for showing breeding stock to halter in the forenoon and harness and saddle classes in the afternoon. In addition to providing the much-needed show ring facilities, it afforded an attractive feature of the afternoon program in front of the grandstand.

A feature of marked interest in this connection was the thousand dollar saddle horse stake. There were fourteen horses entered in this contest and twelve horses shown, and among them the highest class saddle horses of America. This was pronounced the most successful saddle horse stake held at any fair during the 1914 circuit.

The subway under the track, and the clearing of the infield opposite the grandstand, made it possible to put on a race course for steeplechase racing immediately inside the fence of the regular half-mile track.

Provision has also been made in the classification during the past two years for hunting horses and for high jumping contests. These features have added materially to the attractions of the evening and afternoon programs, and have afforded encouragement to a highly serviceable type of horses that has been rapidly passing out of existence, and for which an unusual demand now exists on account of the foreign war.

A class for military horses has been provided during the past two years. Mr. Chas. E. Perkins, of Burlington, Iowa, has annually donated $100 in prizes for stallions suitable for siring cavalry remounts.

A new policy was followed in providing a complete judging program, giving the hour and place of showing every class scheduled in the horse department during the entire fair, including the night shows. This proved no small task, as there were over 300 separate rings to be shown and judged. A definite schedule and plan for every event during the show, however, proved to be of decided advantage, and this plan will, undoubtedly, be followed permanently in this and other state fairs.

The yearling futurity stakes for draft stallions and fillies of the four leading breeds proved again to be a feature of marked interest, and unusual excellence. The plan for draft horse futurity prizes originated at the Iowa State Fair four years ago by coöperation between the management of the Iowa State Fair and the Chicago Daily Live Stock World. The National Draft Horse Breeders' Futurity awarded at the Iowa fair in 1914 carried a total of about $4,000 in prizes awarded on yearling stallions and yearling fillies of the four leading draft breeds. Since the inauguration of this feature in the horse department of the Iowa State Fair four years ago, draft horse futurity shows have been established in connection with the International Live Stock Exposition at Chicago and at the Ohio and Illinois state fairs, and during the past year the American Shorthorn Breeders' Association made provision for futurity shows for Shorthorn bulls at the American Royal and at the International Live Stock Exposition. The American Poland-China Association, in coöperation with the Chicago Daily Live Stock World, has also conducted futurity shows with marked success at the Iowa and other leading state fairs during the past two or three years.

Another new feature was introduced at the 1914, fair in the way of a horse shoeing contest. Cash prizes, to the amount of $75, in addition to silver and bronze medals and diplomas, were awarded for the most skilled and intelligent work in shoeing draft horses. The work was judged according to a score card, under conditions specifically set forth in the rules governing the contest. This proved to be a novel and most interesting and instructive contest. The tent provided was considered liberal in size, but it proved to be altogether inadequate and much larger quarters should be provided for the next contest of this nature. The judging was done by Mr. R. B. Ogilvie, of Chicago, a practical horseman, and an experienced breeder and fitter of show horses, and by Mr. Jack Seiter, of Libertyville, Ill., a graduate veterinarian and an experienced and competent blacksmith.

In submitting this report, I wish to call attention to, and recommend, a plan for a spring stallion show to be held annually on the Iowa State Fair grounds the latter part of February or early in March. The autumn shows in connection with the various state fairs have served an excellent purpose, but I believe that a spring stallion show might serve even a better purpose in encouraging the production of high class draft horses on the farms of this and other states. There are some formidable difficulties in the way of exhibiting breeding stock from the farms at the fall shows. Stallions and brood mares are generally in service at that time, and are not ordinarily fitted for exhibition at the close of the summer season. During the latter part of the winter, at the beginning of the breeding season, they are generally in better condition for showing. This is particularly true of the stallions. The records of horse production in Iowa and of the exhibits at the Iowa State Fair show conclusively that Iowa is producing good draft horses more extensively than any other state in the Union. It is of prime importance that the breeder of pure bred stock be given every assistance possible in the way of securing a good market for his surplus stock. Many small breeders are at a serious disadvantage in this respect. A spring stallion show would serve a most excellent purpose in enabling the farm breeder to fit his stock and show it under favorable conditions for reaching prospective buyers, and the buyers, likewise, would have an opportunity of inspecting a large number of the best colts and stallions of the state annually on these occasions, where purchases could be made to the best advantage. It is believed that such a show would be of special service to the farm breeder who is producing high class horses on a more extensive scale would not be barred from taking advantage of such a show. There is every reason to believe that shows of this kind will come to occupy a permanent place in advancing the live stock interests of a state like Iowa, and the Iowa State Fair ought to take an advanced position in this movement. Letters of inquiry have been sent out to all of the Iowa breeders who have exhibited draft horses at the Iowa State Fair during the past two years, and, without exception, every breeder heard from has responded favorably concerning the plan of holding a show of this kind. Several of the national horse registry associations have also indicated their approval of this plan and expressed a willingness to contribute special prizes from their funds for the encouragement of a show of this kind at the Iowa State Fair.

The matter of holding a spring stallion and bull show was discussed at length by the board members. Mr. Curtiss moved that there be appropriated not to exceed $2,500 for a spring stallion show and sale, this amount to cover all expenses and premiums for said show. On roll call the vote was as follows: Yes—Reeves, Curtin, Tow, Curtiss, Sheldon, Summers and Pike (7). No—Cameron, Olson, Corey, Tribby, Legoe and Mullen (6). Motion declared to have been carried.

Mr. Curtin moved that the secretary arrange to have Mr. H. W. Byers meet with the board on Friday morning, December 11, for the purpose of making arrangements with Mr. Byers to act as attorney in the case now pending in the District Court of Polk County, State of Iowa vs. Mr. Cameron and Mr. Olson for maintaining a supposed nuisance.

On motion of Mr. Mullen, the board adjourned until 9:30 Friday morning, December 11th.

Minutes approved.

MEETING OF STATE BOARD OF AGRICULTURE FRIDAY.

DECEMBER 11, 1914.

Board convened at 9:30 a. m. with President Cameron presiding. On roll call the following members responded: Cameron, Olson, Corey, Tribby, Phillips, Reeves, Curtin, Legoe, Sheldon, Summers and Mullen.

Secretary Corey read the minutes of the board meeting on Thursday, December 10th, and same were approved.

Mr. Legoe moved that the management of the spring stallion show be delegated to the Executive committee and Mr. Curtiss. Seconded by Mr. Curtin. Motion carried.

Secretary read the report of the Executive committee on appointment of superintendents for the various departments for 1915, as follows:

SUPERINTENDENTS OF DEPARTMENTS, IOWA STATE FAIR AND EXPOSITION, 1915.

Public Safety—C. E. Cameron, director in charge; General Guy E. Logan, Des Moines, superintendent.

Admissions—O. A. Olson, Forest City, director in charge; N. W. McBeath, Whiting, superintendent.

Ticket Auditing—C. W. Phillips, Maquoketa.
Concessions and Privileges—J. F. Summers, Malvern.
Live Stock Sanitation—J. I. Gibson, Des Moines.
Horses, Ponies, Mules—Charles F. Curtiss, Ames.
Speed—E. J. Curtin, Decorah.
Cattle—H. L. Pike, Whiting.
Swine—Cyrus A. Tow, Norway.
Sheep—C. H. Tribby, Mt. Pleasant.
Poultry—
Implements and Machinery—J. P. Mullen, Fonda.
Agriculture—F. E. Sheldon, Mt. Ayr.
Pantry Stores and Apiary—F. E. Sheldon, Mt. Ayr.
Dairy—W. B. Barney, Des Moines.
Horticulture—Elmer M. Reeves, Waverly.
Floriculture—Wesley Greene, Des Moines.
Exposition Building, Textile, China, etc—T. C. Legoe, What Cheer.
School Exhibits—E. C. Bishop, Ames.
Grounds—Jas. H. Deemer, Des Moines.

Mr. Phillips moved that the secretary be authorized to have printed six thousand additional copies of the stallion registration division bulletin for 1914. Motion seconded and carried.

Mr. Phillips moved that the dates August 25-September 3, the dates assigned the Iowa State Fair at the meeting of the American Association of Fairs and Expositions, be accepted for the year 1915, and that the price of admission on Wednesday, Thursday and Sunday, August 25th, 26th and 29th, be 25c; other days, 50c. Seconded by Mr. Sheldon. Motion carried.

Mr. E. C. Bishop, superintendent of the School Exhibits department made a verbal report of the School Exhibits department for 1914. Recommendations for changes in the School Exhibit premium list to be submitted at an early date by Mr. Bishop.

Mr. Summers suggested that the manner of selecting boys for the boys' state fair camp be changed, and that instead of the essay contest conducted by the county superintendent, an acre contest or something of that nature be adopted. The matter was discussed and Mr. Legoe moved that the boys' camp and kindred matters be left with the Executive committee and Professor Bishop with power to act. Seconded by Mr. Summers. Motion carried.

Mr. Summers moved that the Executive committee be authorized to print 4,000 copies of the school premium list early in the coming year. Seconded by Mr. Tribby. Motion carried.

Mr. Sheldon and Mr. Legoe were excused from attendance during the remainder of the meeting.

The matter of asking the legislature for appropriations for permanent buildings was discussed. Mr. Reeves moved that the board ask the legislature for an appropriation sufficient to build a sheep barn after the plans drawn by Architect O. O. Smith and approved by the board in 1913 and also an amount sufficient for a complete sewer system on the fair grounds. Seconded by Mr. Tribby. Motion carried.

The claim of Mrs. Mary J. Latta for a collar valued at $15 which was lost in the fine arts department during the 1914 fair was presented. Also a claim from Anna Marie Meyer for six doilies valued at $18, which were lost while on exhibition in the fine arts department. Mr. Phillips moved that the claims be not allowed. Seconded by Mr. Curtin. Motion carried.

The claim of Fred S. Castle, Joy, Illinois, for $6 refund of pen rent in the swine department was presented. Mr. Phillips moved that Mr. Castle be refunded the $6 pen rent. Seconded by Mr. Pike. Motion carried.

Secretary read a communication from Prof. E. F. Ferrin, superintendent of the Boys' Judging Contest, relative to the contest for the 1915 fair which made recommendation that the number of scholarships be increased to ten, the total amount of money offered to be increased from $600 to $1,000. Mr. Summers moved that the recommendations be referred to the Executive committee. Seconded by Mr. Curtin. Mr. Reeves moved to amend the motion by limiting the amount of money for scholarships to $600. Seconded by Mr. Olson. Mr. Curtin accepted the amendment, and the motion as amended was carried.

Secretary read a report of the Babies' Health Contest from Mrs. Mary T. Watts, superintendent, and same was placed on file.

Secretary read the report of E. L. Beck, superintendent of the Poultry department. The report was placed on file.

The president appointed as committee on per diem and mileage, Pike, Mullen and Summers.

Secretary read the report of Mr. Wesley Greene, superintendent of the Horticultural department, and the report was placed on file.

Mr. H. W. Byers conferred with the board relative to acting as counsel for the defendants in the case of State of Iowa vs. C. E. Cameron and O. A. Olson. Mr. Phillips moved that the secretary be authorized to employ H. W. Byers as counsel to defend the officers of the Iowa Department of Agriculture in the indictment brought against them in the Polk County District Court for maintaining a supposed nuisance on the state fair grounds during the 1914 fair. Seconded by Mr. Curtin. Motion carried.

In the matter of accounts uncollected by the superintendent in the concessions department, Mr. Reeves moved that the delinquent parties be notified by the superintendent of concessions that unless a satisfactory settlement was made at once they would be reported to the American Association of Fairs and Expositions for suspension. Seconded by Mr. Mullen. Motion carried.

A bill of $5 for dues to the County and District Fair Managers' Association was presented by the secretary and ordered paid.

Mr. Phillips moved that all unfinished business be delegated to the Executive committee with power to act. Motion seconded and carried.

The committee on per diem and mileage made the following report and Mr. Pike moved its adoption. Motion seconded and carried:

Mr. President, your committee on per diem and mileage beg to report as follows:

		Days	Rate	Amount	Miles	Amount	Total
12074	C. E. Cameron	6	$ 4.00	$24.00	110	$14.00	$ 38.00
12075	O. A. Olson	6	4.00	24.00	155	15.50	39.50
12076	C. H. Tribby	6	4.00	24.00	144	14.40	38.40
12077	C. W. Phillips	6	4.00	24.00	210	21.00	45.00
12078	Elmer M. Reeves	6	4.00	24.00	128	12.80	36.80
12079	E. J. Curtin	6	4.00	24.00	195	19.50	43.50
12080	Cyrus A. Tow	6	4.00	24.00	112	11.20	35.20
12081	T. C. Legoe	6	4.00	24.00	85	8.50	32.50
12082	Chas. F. Curtiss	6	4.00	24.00	37	3.70	27.70
12083	F. E. Sheldon	6	4.00	24.00	123	12.30	36.30
12084	J. F. Summers	6	4.00	24.00	160	16.00	40.00
12085	Jno. P. Mullen	6	4.00	24.00	117	11.70	35.70
12086	H. L. Pike	6	4.00	24.00	206	20.60	44.60

Respectfully submitted,

H. L. PIKE,
J. F. SUMMERS,
J. P. MULLEN,
Commitee.

On motion of Mr. Pike, the board adjourned.

PART II

Proceedings of the State Agricultural Convention

WEDNESDAY, DECEMBER 9, 1914.

The convention was called to order at ten o'clock a. m. in the Agricultural rooms at the state house, by the president of the State Board of Agriculture, Hon. C. E. Cameron.

Vice President Olson presided while President Cameron made the following address:

PRESIDENT'S ADDRESS.

BY C. E. CAMERON, ALTA, IOWA.

Never in the history of the fair was there a more auspicious opening than that of the fair of 1914. Every department was full to overflowing with the resources of this great state and the surrounding states of the Mississippi Valley. Iowa, the center of all the great agricultural states of this union, should have the greatest agricultural fair in the union, and this year demonstrated beyond a doubt that we had fulfilled that mission from an exhibit standpoint. Never in all my connection with this great instituion have I seen a more optimistic board of managers prior to the opening of the fair and up to Monday night when that fearful storm struck our grounds. We had predicted that the total attendance would beat all records and felt confident that we would reach the three hundred thousand mark. But that old Scotch saying is as true today as when it was first spoken—"The best laid plans of mice and men gang aft aglee,"—and agricultural fairs are no exception to this rule. You gentlemen who are here today representing the different county fairs of this state know that good weather is the greatest asset that a county or district fair can have. Well, that holds good in all state fairs, as a great many of the leading fairs this year can testify. While we had our storms, our dry weather in some parts of the state, and the war, all conflicting with the successful financial interests of our fair, our attendance was only some eight thousand less than last year, and 1913 was the banner year for attendance.

We had made great plans for this year's fair; had increased the premiums something like fifteen thousand dollars and made permanent improvements on the grounds over and above the appropriation of seventy-five thousand dollars made by the last General Assembly for the Women and Children's Building. The following permanent improvements were made on the grounds: Completing Women and Children's Building and furnishing same, $8,000.00; new brick cattle barn. $5,893.80; subway under the track, $6,657.92; cooling out paddock in the speed department, $9,867.19; enlarging the street car station, $3,204.26; moving and repairing Power Hall, $952.57; grading, $472.57; cement walks and curbing, $3,019.74, and numerous other improvements making a total of $48,288.13 for permanent improvements other than the Women and Children's Building.

The great problem of the day with the managers, not only of state fairs but of county and district fairs, is, "What can we have to increase the interest and the attendance." Nowadays there are so many counter-attractions held during the summer months that when fair time comes a great many people feel that they have seen about all there is to see and do not seem to take interest in the fairs as they formerly did. This applies more particularly to county and district fairs. In my opinion, we must go back to first principles, and that is, not lose sight of the educational features of our fairs. We should try to make the different departments of the fair more interesting by introducing new ideas, by making strong competition in the different departments, enlarging the departments, interesting the boys and girls to make exhibits and to instill in their minds that the future of the county and state fairs will fall on their shoulders and that they should commence early in life to take up this great work.

I feel sometimes that we have gone mad on the amusement side of our fairs and neglect the educational side. We should have amusements at our fairs, but I think there is a time and a place for them. I am strongly of the opinion, as I have stated before in some of our meetings, that the forenoon of every day of the fair should be devoted to the exhibits and discussion by the patrons of the fair of the different exhibits, as was the case in years gone by. Then the people have a chance to visit with each other, renew old acquaintances, and then by noon or after dinner they are ready for the amusement side of the fair. My early experience with fair work was along this line and I am free to admit that I believe the people went home better satisfied with the fair then than they do now. My reason for thinking so is, so many people will remark, "What is the matter with the fair? It is not like it used to be." I am speaking now more particularly of our county fairs. I am free to admit that I have been guilty of the very things I am complaining of now. We thought that to make the fair a success we had to have a continual round of pleasure from the time the gates opened in the morning until they closed at night. What has been the result of this condition?—our exhibits in almost all of the departments have fallen off. Why?—because the people thought they had to go and see the ball game or other amusements that had been procured, and the exhibitors who had brought their stock and other exhibits were left alone with them—everybody went over to the amusement features, and exhibitors became disgusted with no one looking over the different departments. It has been the policy of the Iowa State Fair to allow no attraction in the forenoon that would in any way detract from the educational features of the fair. Hence the reason that seventy-five per cent of the attendance of the Iowa State Fair is on the grounds by ten o'clock a. m. I know of state fairs where the attendance of seventy-five per cent comes after twelve o'clock, and then mostly for the amusement features. If we expect our fairs to continue to be a success we must lay great stress upon the educational features.

One of the greatest improvements that has been made on the Iowa State Fair grounds is the new Women and Children's Building, completed and used for the first time this year. This building is a model of completeness and the first of its kind on any fair ground in the United States, and to say that it was appreciated is putting it mildly. You had only to stand for a few moments in the rotunda of the building and see the thousands of people come and go and hear the favorable remarks they made as they passed by.

The new cattle barn used by the dairy cattle was also appreciated by the dairy interests of this state. The subway under the track was one of the improvements that has long been needed, not only in lessening the danger of crossing the track when the races were on, but in allowing a great many of the classes in the light harness and saddle horse department to be shown in front of the grand stand where the people could sit and see the judging being done. This certainly added a new and interesting feature to the afternoon program. The building of the cooling out paddock for the racing horses has entirely eliminated the long waits between heats, as all horses to be raced in the afternoon must come to the paddock and cannot go back to the barns until after their races are finished. Everything in this department works like clockwork. The new addition to the street car station was most needed, as by the extension of the platform four cars can be loaded at once where before only two cars were loaded at one time. In fact, every permanent improvement that was made on the grounds this year has added to the comfort and convenience of the patrons of the fair.

With a few more permanent buildings on the grounds, the Iowa State Fair grounds will be a model of completeness for fair work. There should be built this coming year a sheep barn and exhibition ring. We have some permanent buildings for every stock department except the sheep exhibit. We have been putting them off from year to year and certainly something should be done this coming year for this department.

Another essential thing that will have to be taken care of this coming year is the sewer system. Our toilet rooms are in fine shape and there are no better on any fair ground, but the sewerage has always been a great problem with the management. We have been waiting anxiously for the completion of the Thirtieth street sewer. I understand they expect to complete that this winter, and if they do I am sure the coming legislature will make an appropriation to install a complete sewer system on the grounds to connect with the Thirtieth street sewer when that is done. I do not think they will have any occasion to send the sheriff out and arrest the president during the fair for maintaining a nuisance as they did this year.

Last week in Chicago I attended a meeting of the American Association of Fairs and Expositions and never have I seen so much interest manifested in fair work as at our meeting there. This organization started some twenty years ago with a few of the western state fairs. It has been so successful in the interchange of ideas that the success of the members of this organization has spread all over the United States and up into Canada. There were delegates there from Vancouver, B. C., and from New York to California. We have now a membership of fifty-two state fairs and expositions and the association is doing a great work for the members. We all use the same classification in our stock departments. We have what is called a Board of Appeals for the purpose if any exhibitor or concession party is barred from showing or running a concession on the grounds they are barred from all the members of the association until the Board of Appeals takes the matter up and adjusts the same. In this way it will only be a few years until we eliminate the undesirable from our grounds.

I was glad to see so much interest manifested yesterday in the county fair managers' meeting and hope you will enjoy the program we have prepared for you today. I thank you.

The following committees were appointed by the president:

Committee on Credentials:

H. L. Pike, Monona county; J. W. Bennett, Bremer county; W. H. Shipman, Muscatine county.

Committee on Resolutions:

John W. Palm, Henry county; T. W. Purcell, Franklin county; C. W. Hoffman, Decatur county.

The President: Gentlemen—We will have to change our program a little this morning. We had on for an address this afternoon Mr. W. W. Marsh, president of the Greater Iowa Association, of Waterloo. We received a telegram from Mr. Marsh last night, stating that he was detained in Chicago. As you all know, Iowa is particularly interested in this foot and mouth disease, and Mr. Marsh is particularly interested inasmuch as he has some stock that is detained at the International Stock Show there and it is impossible for him to get away. Mr. Corey called him up and he kindly consented that we might call some one else to supply his place, and now it affords me great pleasure to introduce to you Mr. Clum, of the Iowa Booster Association.

ADDRESS.

By Woodworth Clum, Clinton, Iowa.

Mr. President and Gentlemen:

I am glad to be here, although our President of the Greater Iowa Association is detained in Chicago on account of his interest in the "Foot and Mouth Disease." If I have to go around the state much oftener I will have to suffer from the foot disease. Some people say that I am a victim of the mouth disease. But, however that may be, I am going to try to tell you very briefly what we have done in getting the Greater Iowa sentiment diffused universally in Iowa; and that is what we have done. The Greater Iowa spirit has been here long before I came to Iowa, and long before we inaugurated this Iowa movement. The only thing we endeavored to do in this Iowa movement was to centralize this spirit for a Greater Iowa. We only tried to take what has heretofore been an individual state pride and make it a collective state pride. Some of us have known what Iowa is individually, but the trouble is that most of the people outside of Iowa don't know it.

Many years ago there was a saying ascribed to Emerson, though it was not original with him. It was first made by a preacher down in New York State. It was this: "The man that writes a better book, preaches a better sermon, or makes a better mouse trap than his neighbor, through he builds a home in the wilderness the world will beat a path to his door." As I say, that is ascribed to Emerson, but he did not write it first. It was written by an old New York preacher and Emerson was keen enough and knew enough to grasp it and wrote in his lectures and books the sentiment that "A man who writes a better book, preaches a better sermon, makes a better mouse trap, or does something better than his neighbor, though he build a home in the wilderness, the world will beat a path to his door." That was not true at the time it was written and it is not true today. There were three words the old preacher should have put in, and I trust you will yourselves add those three words to make that quotation correct "that though a man write a better book, preach a better sermon, make a better mouse trap, though he build his home in the wilderness, the world will make a path to his door provided he advertises. How many men of genius have gone down to an ignominious finish because their neighbors did not know of their genius. You can think of men, you know of men who have accomplished great things in their little sphere who would have amounted to a great deal more if they had only advertised the fact that they did have a skill in excess of their neighbors. Now, we found out that if we were to do anything with this Greater Iowa movement, we had to watch our neighbors, not only Minnesota, Missouri and Illinois, but we had to keep our eye on all of them. To illustrate, I will tell you a little experience I had. Two years ago,—you who have attended the horse racing out here will appreciate the story. I was down in Louisville two years ago in the October season, when all Louisville is permeated with a horse-racing atmosphere. I went out to the great tracks they have there and saw some races in the afternoon, and, coming back to the hotel, that night every one was talking of the horse-racing; you could not get out of the atmosphere. I walked around the city and finally got down about the wharf and stopped to get my shoes shined. There was a little swarthy darkey came up, I got on the stand and while he was shining my shoes I was talking to him, and noticed that he showed evidence of being in that atmosphere. I said "Sam, what is the matter that you ain't out there with the horsemen; you are built for a jockey; you ought to be out here riding race horses instead of shining shoes." He said "Oh, no, boss, I rode in one race and that is enough for me," and he told me about it. "It is a long story, boss, but it is like this: I went out there one day. Massa Williams had a horse by the name of Major; he was a wonderful horse. We had a big race on this race track at Louisville along towards the end of the season. I was out there just as a hostler, and I just rubbed that horse down and exercised him. About ten minutes before that big race the boss come over and says to me, "Did you ever ride a race?" I told him I had not. "Well," he says, "you have got to go out and ride Major today because Bill's sick, for you know the horse and the horse knows you I can't get anyone else." ' " I says. 'Well, Boss, I will do the best I can.' "I got up and got on Bill's clothes, and I was the swellest looking nigger in all that country." The boss says to me "Sam, let me tell you something. Do you see that big horse over there? That is Duke. You watch the Duke. When you get the wave of the flag watch Duke and as he comes up under the wire see that Major's nose is even with the Duke's hind flanks and let him come into that back stretch and go all the way around, but don't let the Duke's hind flanks get away from you, then when you get down within about a hundred yards of the finishing line give him your heels, and when you get within fifteen or twenty yards, give him the whip and he will shoot up, and when you get up only a few feet away from the finish give him your heels again.' " "So I went into that race. We went into that curve lickity, lickity lick, and I hung right on and I stayed right there with the Major's nose at Duke's hind flanks and when I was 100 yards away from the finish I give him my heels and he run ahead until his nose was up to Duke's side and I give him the whip and he shot up until they were nose and nose, and when I got within a few feet of the finish I give him the heel and we beat the Duke by six inches." I said, "Why, Sam, you won a race like that race and quit? Why they ought to give you a job of riding races." He says, "I didn't win the race Boss." He says, "why there was eight horses passed me while I was beating the Duke."

The great idea in this Iowa campaign was that while we were watching Missouri, Kansas and Illinois, the forty-four other states in the Union would get away from us before we could beat one of them, and we are looking backward and forward, and we are going to see if we cannot do something for Iowa. What, I do not know. I am only one of the Association. We have an Executive Committee of which I am one of the members and I see one of the other members sitting over there. We are trying to do something—trying to size this thing up and see what can be done. What are we going to do in Iowa? You men know what land is worth in Iowa today; you know the farmers of Iowa have left us for several reasons. One reason is they have never been able to see wherein their farm values are going to increase much over $150; they feel that $150 an acre is pretty near the top price for land,—that $200 is the top price. Do you know what Germany has done in the last forty years? You know that following the Franco-Prussian war they emigrated to this country because their farm lands were worth only $175 to $225 an acre and because there were not sufficient industrial opportunities to take care of the young men and women in Germany. For this reason they emigrated to this country immediately following the Franco-Prussian war in great numbers. But, since that generation what has happened, and why did it happen? Bismarck, who was as great a Prince of Business as ever he was a Prince of War, went into that situation in Germany in 1874, and he said. "We must stop this emigration, we must provide opportunities in Germany for her young men and her young women," and he evolved the slogan,—which in Estherville I saw in the residence of an old German veteran, hanging on the wall of his home, that slogan is: "Germany has room enough and work enough for all her children." I think we should paraphrase that slogan of Germany to read: "Iowa has room enough and work enough for all her children," and then, in the spirit of the Imperial Bismarck, we should put that slogan into effect. He got the government to encourage German industries and Germany began to intensify its industrial life and began to build up its industrial empire to the extent that she was the envy of her neighbors and caused that enmity which has practically brought about the war we have in Europe today. Forty years ago it was a question of Germany doing something for her own young men and young women or else seeing them, or most of them, come to this country. Then what happened to those farm lands? With that industrial upbuilding, thus making a greater Germany, those lands began to be subjected to a more intensified cultivation, industrial enterprises increased and the prices began to rise until just before the war, four months ago, those lands ranged from $750 to $900 an acre. The land that Germans left thirty-seven years ago because they did not know where the higher prices were coming from. Now, you know what the German empire is today. For the past ten years that emigration has practically ceased and Germany has put herself on the right side of the ledger. We do not assume that it is a great thing to lose a little population, but it made the people think of Iowa, and it has made us realize collectively and individually that we must adopt that same slogan that Bismarck evolved and put out in Germany, and this Association wants to get behind every good movement, whether it be a good crop expert, good roads boosting, industrial upbuilding and intensified industry whatever it may be. We want to get behind all those good movements for a bigger and better Iowa in every sense of the word, and we want to be able to say five or ten years from now, as Germany can say today, that "Iowa has room enough and work enough for all her children." How we are going to accomplish it we do not know, but we must do it. You men living on farms have sons and daughters; you don't know what to do with them; you are going out of the state to seek opportunities for manufacturing and farming, we want you to find opportunities in Iowa for these young men and women.

The auditor of state gave me a statement about a month ago and I have used it all over the state and it has not been denied, so I assume it is correct. During the last twenty-five years 150,000 Iowans have left us. How many do you know that left Iowa with less than $5,000? Not many. And how many have left with more than $5,000? A great many. So let's assume that these 150,000 Iowans carried with them $5,000 apiece, and what does it mean? It means that seven hundred fifty millions of dollars have left Iowa in the last twenty-five years taken away by these men and women who have left us because we did not have the opportunities for their young men and young women. Seven hundred and fifty million dollars! Think what it would do for Iowa to-day! If we had to put in new industries in this state it would establish 1,500 new industries in Iowa with $500,000 real money in each one of them. Think of what that means! If we can only make Iowa so it is attractive; so we have a community spirit; so we could love one another and love Iowa and find within our own borders opportunities for our young men and young women. That is what is needed. If we are going to keep our money in Iowa and develop Iowa with it, we don't need anybody's else money. Just think of it! In the next twenty years we can save seven hundred and fifty million dollars to the credit of Iowa. Even cut it in half or a quarter and what does it mean?

Another thing: We asked the state legislature four years ago for an appropriation of funds for publicity work to build up this same idea and to build up this pride and love for Iowa—this state pride. I have found this out: The state gives the State University one million dollars, and the Agricultural College one million dollars a year, in round numbers, two million dollars a year for the education of our young men and women, and I have been told that thirty-five per cent of the graduates of those institutions leave the state thus not only denying Iowa the benefit of their brain and energy, but go into competitive states and give them the benefit of this Iowa brain, energy, courage and skill that they have acquired at the expense of the Iowa tax payer. Now thirty-five per cent—lets call it twenty-five per cent—of that two million dollars is $500,000 a year that we have wasted. In all these years we have been educating our young men and women, -doing missionary work— educating our young men for the benefit of our competitors. Maybe $500,000 is too much. Let's cut it to $400,000, $300,000, to $200,000, isn't it worth something to the state. Shouldn't the legislature do something to appropriate a fund to enable somebody to go out and advertise the resources and the possibilities and desirabilities of Iowa so we can keep in Iowa this thirty-five per cent, thirty or the thirty-five per cent. It is not all sentiment. This is an economic question. It is not all theory. Here we are spending money to educate young men and women and sending them out of the state. We were out at San Francisco a few years ago looking after these Iowa people. At half past 10 o'clock some one suggested that we take a little luncheon at one of the hotels. At 12 o'clock, one hour and a half later there sat twenty-five young men, every one of them between twenty-six and thirty-five years of age, and Judge Deemer went around from man to man and said "Where did you come from," and as I remember the statement every one of these twenty-five young men were either graduates of Ames or Iowa City. Twenty-five of them we got together in an hour and a half out in San Francisco, all working for another state, and building up another locality. That is fine. If we are able to go into this missionary school it is all right, but I don't believe it is the thing we ought to do. Let us give them five per cent—let us be generous and give them ten per cent, but let us keep the other twenty-five per cent at home.

I think this is an excellent time to tell you men about this far-famed Belgian proposition. It has been heralded in the papers all over what the Iowa Boosters were going to do with the hundred thousand Belgian farmers. Let me tell you this,—because it has been somewhat covered up and lost sight of—in our convention at Ames what we proposed was this: We did propose to the organization that we take steps to bring over a number of Belgian farmers who might take over a ten acre tract under a twenty year contract to pay for it and who might go in and work out their own destiny on this ten acre tract. There was no intention considered, or named, of bringing over the lame, the halt, the blind, the crippled, the unworthy, or crooked or criminal classes. Our friends, the enemy, have accused us of wanting to bring in the whole class, including undesirables. What we did was to appoint a committee to go around the state and make investigation and study the matter over for a period of weeks and months if necessary, and then come back to the people of Iowa—as the representatives of this association and recommend that we do get some Belgians, or that we do not get some Belgians. That is the status of the matter. Nobody need worry or be afraid that we are going to go off half-cocked and drive out our Iowa farmers. Let me tell you how the Belgian story works. After that story started I got a letter from South Amana, written in a ladies' handwriting and signed Mrs. F. R. Lewis. She said, "I see by the papers that the Greater Iowa Association is going to bring over some Belgian farmers. I protest. My husband and I are young people. We have lived in the city all of our life until two years ago, when my husband's health demanded that we go to the country. We had no money—just enough to get a small tract of land and make the first payment and get in a small crop. Neither of us ever saw an agricultural college or read an agricultural bulletin, and we did not know a thing about agriculture. Since we have been here —two years—we have read and studied various publications and tried to brush up on agriculture, and I am glad to say that at this time my husband and I are husking seventy bushels of corn to the acre; there is not another farmer in this county that is doing it. The yield is running from fifty to fifty-five bushels. We are studying farming, and if you can get Iowa people all over to go into the cities and towns of

Iowa and get some of these unemployed people that have energy and ambition and a little bit of nerve and bring them out, they can do what we are doing." So those are the impluses all tending in the same direction. I am sure every one of us, whether member of the Association or not, are all headed in that same direction, and I want to assure you we have no idea of doing anything that is wrong—nothing that will be done in a hurry. This is a campaign that will last over a term of years. The first thing we did was to go out around the state and raise $100,000 as a guaranty for the building at the Exposition at San Francisco. Some one said we would not raise that amount. I told them sure we could; that this was only the opening gun. And I believe that every man in this room will thank us for raising it. When I learn that Indiana is spending $30,000 for live stock at the exposition, and that Ohio and New York are going to spend $35,000; that Wisconsin, Illinois and Minnesota are spending between $12,000 and $20,000 for an agricultural building exhibit at San Francisco, then to think this great state of Iowa would stand back in shame because it had no exhibit and see other states around it so abundantly represented. Men, we are too big for that. We have got too broad a vision for that and, while we are for economy in public affairs, while we are for retrenchment along similar lines, we do not want to stop in this march of progress; we want to be up in the front rank with the progressive citizens, and I hope we may be able to go out to the world's fair next year and show them what Iowa has done and is capable of doing. We don't want a repetition of what happened a year ago in regard to that Japanese live stock commission that came over here two years ago to buy the foundation stock for the rehabilitation of Japanese live stock; how they came here, coming through from the East and through Wisconsin and finally came back to Iowa and said "Your stock is the best, the nicest, neatest we have seen, but we would not dare to take the stock back to Japan because they have never heard of Iowa, and we are going back up to Wisconsin and buy a herd that we have heard of up there." Which they did. Not a nickel's worth of that Japanese money did we get. Now, we are going out there to tell them the story and we will take that dairy train up through the northwestern dairy country, and we are going to show them in a practical way what Iowa can do with live stock.

I hope every one of you will give this full consideration and full thought. It has dollars and cents in it every way you look at it, and we have to have your help; we have to have your enthusiastic support, and we have to have your pelf. I thank you.

Chairman: The next thing on our program, gentlemen, will be an address, "How the Extension Department Can Assist the County Fairs and Farmers' Institutes," by Prof. R. K. Bliss, Director Extension Department, at Ames.

HOW THE EXTENSION DEPARTMENT CAN ASSIST THE COUNTY FAIRS AND FARMERS' INSTITUTES.

BY R. K. BLISS, AMES, IA.

Mr. President and Members of the State Board of Agriculture:

I feel like saying "Amen" to everything that the president stated in his address this morning. He stated the educational side of our state and county fairs in more effective words than I will be able to do it. I am glad the State Board of Agriculture has the attitude that it has in regard to these educational matters, and so far as the Extension Department is concerned, all it can do toward helping the county fairs and county institutes will be along the educational side.

We appreciate the fact that the Extension Department is entering a field which was pioneered by the County Fair and by the State Farmers' Institute, and by the agricultural press. We desire to co-operate; and these already existing institutions as far as it is possible to co-operate; and this morning I merely want to point out some of the things that the Extension Department will be able to do in helping the local fairs to make their work more educational. I believe that Professor O'Donnell presented a classification of livestock—a uniform classification of the livestock—yesterday at the meeting of the Secretaries of County Fairs, and I think that it is an excellent thing to do. A mixed classification interferes with the educational features of the County Fair very materially.

I judged at fairs this fall in which we had Angus cattle, Shorthorn cattle, Holstein cattle and Jersey cattle in their respective classes, and then we had the winners of all four of those breeds come together for sweepstakes. Now, just think of a judge who had passed upon the champion bull of the show having to decide between a Shorthorn, an Angus, a Jersey and a Holstein. And, by the way, Mr. Barney, I gave it to the Holstein at that time. But the educational feature of that work, it seems to me, was largely spoiled and dissipated by the fact that these different breeds were brought together. I am sure you discussed that question thoroughly yesterday.

I want to make a plea, also, at our County Fairs, for a more prominent place for our livestock show; especially for the judging work. Oftentimes the judging work of livestock is crowded off in a corner. I don't think it is intentional—just sort of overlooked. Probably lopped over a little on the side of making this work amusing; but I would like—to come back—to make the livestock part of the show especially educational and give it a prominent place on the program. I would like to see bleachers, or something of that kind, where people could sit down and watch the judges judge the livestock, and would like the judge to give his reason for every class he judges. That makes his work educational, and he had just as well do it. I know from experience that he will make a better impression and give better satisfaction if he gives a reason for each class he judges than if he does not. That does not mean that he needs to be cruel in giving these reasons. If he has to study fifteen minutes or so between the two animals before he decides which one is the better, let him take the time. It is a well known fact that it is very difficult for him to decide which one of these animals is the best, and he can tell the excellencies of the one he places down as well as the one he places up. If he does this, he will have no trouble with the exhibitors. But the main thing I am thinking about is in regard to giving it a prominent place, and also a permanent place, on the ground, and erecting bleachers. The thing I am thinking about is these boys standing around looking on. They are going to gather up a good many wise suggestions and they will go home and be interested and they can put into use in their work these things and you will have a larger crowd—if that is done. I think a good thing is to have a boys' judging contest at these County Fairs. They are a little hard to work up. It is impossible to get boys to enter the contest at the fair if it is only advertised in the premium list. There must be some work—personal work—as well as advertising. You have got to go out and speak to this boy and to that boy and tell them, "Now, you had better come down into that judging contest." Some of them will be bashful and backward, but a little encouragement from the elder will induce them to join in it. Now, they can help out in these judging contests and relieve the fair management of considerable labor along that line, and it is well worth while to do it.

The judging of corn and small grain can be handled in a way similar to judging livestock. That is, it can be well arranged from an educational standpoint; the men judging can give reasons for their placings upon it as they go along. The same thing is true of horticultural and vegetable crop exhibits. I am pleading here for the educational side—and it can easily be made educational if the one who judges the different classes takes pains to give reasons and answer questions and the show is given a prominent place upon the program.

There are some other things, it seems to me, in which the Extension Department might help local fairs. One of them is the judging of the farm exhibits. I remember attending fairs which had a number of individual farm exhibits—I think some half dozen of them—and they attracted a great deal of attention. I think there was nothing at that fair that attracted more attention than these individual farm exhibits. They have become one of the most attractive features of the State Fair, and I believe the time has come for them to be placed in the local fair. I think that it is a good thing. The school exhibit is also a good thing—that has largely been developed in our County Fair—and it should be encouraged and supported because it is educational, because it attracts the children throughout the county and city children as well. And that is another good feature of the work in which the Extension Department can help out. Now we come to the college exhibit. For the last few years the Experiment Station, through the Agricultural Extension Department, has been sending exhibits to the local County Fairs in which the work of the Experiment Station is presented in an attractive and interesting manner. I believe that is an excellent way of calling attention to the facts and truths that have been worked out by these Experiment Stations through the country, and that it can be made an important feature of our local County Fairs. I think it should be put on by the Extension Department in so far as possible without any expense to local people except necessary traveling expenses and the expense of erecting a tent or place in which to show the exhibit. We have found these exhibits were quite largely attended during this last fair season and earned very favorable comments. They were certainly interesting in their manner of presenting the facts, and no doubt the people derived a great deal of benefit therefrom. So, those are some of the features in which the Extension Department can be of assistance in the way of educational matters at these County Fairs. I think few of us appreciate the real importance of the County Fair as an educational influence in this state. The bringing together of the best breeds of livestock in the county and comparing them is of great educational value, and needs encouragement and development in every possible way.

Now I come to the question of these farmers' institutes. The Farmers' Institute is one of the pioneer organizations in the development and the promoting of better agriculture. We appreciate the important place which it has held and we wish to co-operate with it in every possible way. At the present time the Extension Department maintains a corps of speakers whose business it is to attend these farmers' institutes and give such help and assistance as they are able to give.

I haven't very much to say about the program at the farmers' institutes. I think they have been very well worked out. It is a matter largely in the hands of the local fairs as to what shall go on in the particular institute. There should be some method of guarding against immoral interests and practices and influences in these institutes. There is certainly a great difference at the various farmers' institutes. Some places you go you will find a very enthusiastic and large attendance; everybody pushing and working, trying to make the thing go. In other places you will find a kind of desultory affair. You go in the morning at ten o'clock, and possibly wait around until eleven before anything is done; have a small crowd in the forenoon and a comparatively big crowd in the afternoon. Now, that is due to the local method of working up these farmers' institutes. This attendance depends on the local people. I have often thought if tickets were sold; if men got out through the country and made an effort to sell tickets at a small price, and then made an attempt to put on a program, it would be worth the money expended, or more, and they would have a larger attendance, get started earlier in the morning, and accomplish more during the day.

Now, as regards the Extension Department and the things it can do to help out the farmers' institute. As the institute is now organized each one is independent largely of the other. Each community meets together and decides upon the time at which it can hold its institute meeting and goes ahead and makes its arrangements, and it very often happens that several institutes select the same week. They write in to the Extension Department and it is impossible to give assistance as we would like to, because so many institutes hold their meetings at the same time. We have to call upon the College faculty in order to fill these dates, and oftentimes we are unable, with all the help we can get from every available source, to fill the dates that come to us from these institutes. Then, for instance, an institute will be given in the southern part of the state perhaps Monday and Tuesday—and maybe our men have to go across to the other side of the state Friday and Saturday to attend an institute, taking the whole of the time to cover the distance between the two institutes that he has to travel. Consequently, we are not able to use our men in the most intelligent and best manner. I have wondered if it would not be possible to work out some sort of arrangement whereby we could have our institutes in a series so we could utilize the time of these men employed by the state to their fullest capacity. Start them and keep them busy Monday, Tuesday, Wednesday, Thursday and Friday, and if you have an institute on Saturday they will have a full week's program—and keep them going until the institute season closes. It would work for efficiency, work for the saving of money to the institute, save money to the state, and increase the efficiency of our men. I speak of this from the standpoint of efficiency only. I think we ought to strive to make our work as efficient as possible, and to accomplish as much as possible we should plan with a view to securing the most service for the least expenditure of time and money, and it seems we should be able to work out some arrangement that is feasible and from which we will derive the largest amount of service and benefit at the least expense.

I think that is something for the secretaries of our farmers' institutes to think about and work upon. Some of them are already working upon this plan. Some of our counties hold a series of institutes extending throughout the county. For instance, Mr. Lefler arranged for a series of colt shows down in Van Buren county,—six colt shows—taking a whole week, and they held these colt shows at different places throughout the county, one day at one place and another at the next, and so on around, and in that way they had an excellent week's work at a minimum expense. Some of the other counties are working along that line also. Now, what I would like to see is that the counties adjoining get together and arrange their institutes so that we could send our institute workmen down to help them. Have, say, live stock at one place on Monday, another place the next day and so on, Tuesday, Wednesday, Thursday, Friday and Saturday, and if they desired a horticultural man to follow up, or a corn man, or an exclusive grain man we could furnish them. In this way it seems to me we could increase the efficiency of our men and make our work so much better that we could make our institute work really one of the vital factors in developing the agricultural interests of the state.

Now, I am not going to try this morning to present any plan. Different states have their different methods. Some states place the authority in the state board of agriculture and the institute must comply with the program which the state board of agriculture works out before the board will furnish them the necessary funds. They do not have the entire option in the selection of the date. In other states that feature of the work—that is the arrangement of the dates—is left to the college. I am not presenting or advocating any particular method of doing this; but I would like to see some method worked out, and I would like to see it come from the secretaries of the farmers' institutes. I would like to see a plan evolved that would solve this county farmers' institute problem, and work it out satisfactorily for all concerned, and I am sure if we could do that, it would increase the institute work very materially at the same time. I thank you.

President: Gentlemen—In rearranging our program for the day, Mr. Burger, of Black Hawk county, has kindly consented to fill the place Mr. Marsh was to occupy this afternoon.

Now, we will listen to the report of the secretary.

SECRETARY'S REPORT.

A. R. COREY.

In reporting the transactions of the department of agriculture to this convention I will endeavor to touch upon the more important phases of the work and leave the matter of details for publication in the Iowa Year Book of Agriculture, which will soon be placed in the hands of the printer.

The following work comes under the jurisdiction of the department of agriculture:

Conducting the Iowa State Fair and Exposition.
Conducting the Stallion Registration Division.
Publishing the Iowa Year Book of Agriculture.
Collecting and publishing Farm and Crop Statistics.
Conducting the State Publicity Bureau.
Editing Greater Iowa—monthly publication of the department.
Receiving reports and paying state aid to county and district fairs.
Receiving reports and paying state aid to farmers' institutes.
Receiving reports and paying state aid to short course associations.

THE STALLION REGISTRATION DIVISION.

At the present time nineteen, or practically two-fifths of the states in the Union, have stallion enrollment laws upon their statute books. In several other states laws are being formulated which will be introduced at the coming sessions of their respective legislatures. Stallion inspection is here to stay. At the last meeting of the Iowa Draft Horse Breeders' association, the matter was freely discussed and the members present unanimously agreed that the stallion inspection law is a necessity.

The following statistics enumerate the number and character of licenses issued from January 1, 1914, to December 1, 1914. Six thousand three hundred and thirty-nine certificates for pure bred stallions; 2,683 certificates of soundness for grade stallions; 233 certificates for pure bred jacks, and 589 certificates of soundness for grade jacks. Listing them by breeds the relative standing of each breed is shown: Percherons, 3,164, Belgians 942, American Trotters 624, Shires 522, French Draft 512, Clydesdale 332, Morgans 55, German and Oldenburg Coach 54, Shetland Ponies 53, saddle horses 28, Hackneys 18, French coach 18, Suffolk 9, Thoroughbreds 6, Cleveland Bays 2. Adding to this the grade stallions, pure bred and grade jacks it makes a grand total of 9,844. Comparing this with last year's total we find up to this date 619 more certificates are in force than were issued during the entire year of 1913.

At this time there remain a number of unrenewed certificates in our files which were issued in preceding years and have not been accounted for. A delinquent letter was issued in every case and the following data are presented herewith: 253 were reported dead, 156 castrated, of which 106 were grades, 415 sold outside the state. Upon a more careful examination we find that a large majority of those not heard from have probably been retired from service, inasmuch as state certificates mentioned the unsoundness with which they were affected. The mare owners are becoming more educated along modern horse breeding methods and realize that there is an inherent tendency for the progeny to contract the same unsoundness as is found in the sires and dams.

Every three years the Percheron Society of America compiles data from reports of states having stallion inspection laws and presents condensed information as to the actual condition of affairs in these states. The following are some of the conclusions recently arrived at after securing detailed information from ten leading states: First, the percentage of grade sires has been substantially reduced; second, there has been a marked increase in the number of pure bred sires; third, despite the gain noted there is still a large number of grade stallions in service; fourth, the number of pure bred draft sires is not sufficient. (Experienced horsemen know that in the best draft horse breeding districts there should be at least one pure bred draft sire for each 200 horses. Only one state—Iowa—has gone below the 300 mark); fifth, Iowa has taken front rank, she has more pure bred sires in proportion to total number of horses, and more to her total number of farms, than any other state. Seventy per cent of the stallions offered for public service in the state of Iowa are of pure breeding, which is a larger percentage than in any other state.

Section three, paragraph one, states that glanders, dourine, coital exanthema, urethral gleet, mange, melanosis, blindness, cataract, bone-spavin, ringbone and periodic ophthalmia (moon blindness) shall disqualify a stallion from public service. During the period intervening between January 1, 1912, and December 1, 1914, 133 stallions were refused state certificates on account of being affected with one of the above unsoundnesses or diseases. Twenty-one were disqualified for blindness; 17 cataract; 1 coital exanthema; 7 melanosis; 21 periodic ophthalmia (moon blindness); 54 bone-spavin; and 12 ringbone.

Fraudulent pedigrees are still being passed upon unsuspecting purchasers. To some people the terms "registered" and "pure bred" are synonymous. Fifty applications were presented this year accompanied by pedigrees that were absolutely worthless. In each and every case a grade certificate was issued and the owner promptly informed as to the actual standing of the association in which the stallion in question happened to be enrolled.

In some cases the department also found it necessary to issue grade certificates to stallion owners who submitted pedigrees from recognized registry associations. This resulted from various discrepancies in the registry certificates, showing alterations either in age, color or markings.

Every spring about two-thirds of the stallion owners wait until the last two weeks of March to file their applications. It is absolutely impossible to issue these certificates promptly when all are received in such a short period of time. This condition can be easily corrected by giving early attention to renewals. It will not only alleviate the work of the department, but the entire work may be carried on more expeditiously and certificates might be issued more promptly after being filed.

The department is formulating some changes which will materialize into a more systematic plan for handling the applications more rapidly and for the proper enforcement of the stallion law. In several cases a special representative has been detailed directly from this department to make a personal investigation in regard to violations of certain sections of the law. He reports that in a number of instances premises of stallion owners were visited, and there seems to be some negligence about posting copies of their certificates as outlined in section 4. In view of this fact, the department is planning to provide each stallion owner with copies of their certificates for the purpose of posting. On this account there will be a more rigid enforcement of section 4. Sympathy will not be extended to any stallion owner; there will be no alternatives. Upon visiting premises and finding violations of this section, said infringements will be promptly reported to the proper authorities and request for prosecutions demanded.

PUBLICITY DEPARTMENT.

The publicity department during the past year has issued an average of 12,000 copies of Greater Iowa each month, endeavoring to reach those classes of people who are interested in Iowa development and Iowa agriculture and also those who might be interested in becoming residents of this state.

An effort has been made to collect and keep on file statistics with reference to Iowa and her resources and to have information at hand with which to supply the increasing demand for facts and statistics about Iowa.

The department is cooperating wherever possible with organizations concerning Iowa's crops and agricultural conditions and her standing with reference to other states in crop yields and number and value of live stock.

The newspapers, farm papers and other publications throughout the state are very generous in their use of publicity articles on Iowa and have cooperated with this department most loyally.

FARMERS' INSTITUTES.

Seventy-four counties held 91 institutes during the fiscal year ending June 30, 1914. The total attendance was 153,277 and the number of sessions held was 799.

The state aid paid these institutes amounted to $5,363.34. In addition to this the local organizations contributed $20,857.83 to meet the running expenses.

The expense for lectures, judges, and instructors was $4,776.51; for premiums on live stock, agricultural products, etc., $13,258.16, and for the miscellaneous expenses $8,035.60, making a total expenditure of $26,070.27 by all institutes.

We find that a great number of the judges, speakers and instructors for these institutes are supplied by the extension department at Ames. By glancing through the schedule of dates for the institutes it will be found that there is no systematic arrangement of dates; that there is no arrangement of circuits for the convenience of the extension department. It would seem that the service of the extension department might be extended to a great many more institutes and the traveling expenses of the speakers and judges greatly reduced if the extension department were allowed to select the dates for the various institutes as they do for the short courses.

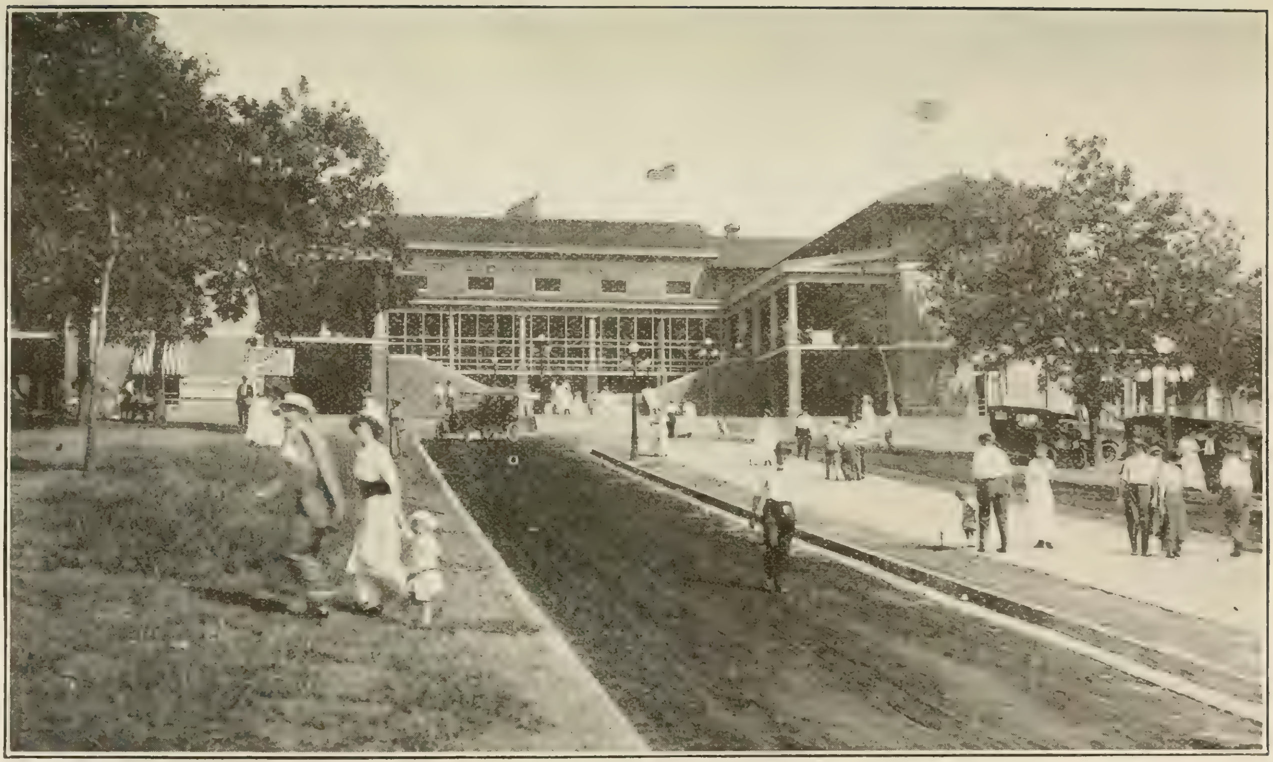
SHORT COURSE ASSOCIATIONS.

The number of short courses held during the fiscal year ending June 30, 1914, and reporting to the department for state aid was more than double the number for the previous year. Twenty associations reported and received state aid to the extent of $2,592.02, as against eight during the previous year receiving $1,175 state aid.

The twenty short courses held 560 sessions, with a total attendance of 62,842. Eight drew the state aid available for county and district fairs; ten that available for institutes, and two drew from both funds.

In addition to the state aid the local associations raised by subscription, etc., $17,651.57 for the purpose of financing the course.

They expended for lectures, judges and instructors $4,218.60; for premiums on live stock, agricultural products, and the products of domestic science, $6,985.27, and for miscellaneous expense $8,189.31.



View of the west entrance to Women and Children's Building as it looked during the 1914 Iowa State Fair and Exposition.

FINANCIAL STATEMENT OF COUNTY
FOR FISCAL YEAR JULY 1,

Number	Counties	Number Sessions	Total Attendance	Receipts	
				Cash on hand	Miscellaneous Receipts
1	Adair	6	1,000	$ 44.19	------------
2	Allamakee	5	750	202.68	$ 152.50
3	Appanoose (Centerville)	12	3,800	131.45	229.50
4	Appanoose (Moulton)	7	925	60.86	219.55
5	Appanoose (Moravia)	3	4,000	111.20	367.04
6	Benton (Keystone)	7	675	84.12	299.20
7	Benton (Vinton)	4	1,000	------------	164.50
8	Benton (Blairstown)	9	2,700	54.00	284.75
9	Black Hawk	7	1,400	37.45	------------
10	Boone (Madrid)	6	1,200	147.60	583.50
11	Boone (Boxholm)	6	460	17.24	67.00
12	Bremer	6	960	------------	18.80
13	Buchanan	6	1,850	8.93	23.06
14	Buena Vista (Rembrandt)	5	1,240	116.60	334.30
15	Buena Vista (Newell)	4	800	136.22	357.50
16	Buena Vista (Storm Lake)	7	1,500	8.01	306.19
17	Calhoun	6	600	112.37	41.00
18	Cass	5	1,000	------------	10.00
19	Cedar (West Branch)	4	1,000	46.65	364.75
20	Cedar (Massillon)	6	650	53.04	18.50
21	Cerro Gordo	7	1,800	------------	56.00
22	Cherokee (Washta)	8	1,050	53.48	95.40
23	Cherokee (Cherokee)	11	2,540	66.00	239.50
24	Chickasaw	10	1,900	50.88	199.60
25	Clay	8	1,600	113.14	293.70
26	Clayton (Strawberry Point)	6	2,100	------------	100.00
27	Clayton (Elkader)	25	2,700	97.63	824.90
28	Clinton	13	2,900	84.00	643.30
29	Dallas	6	330	17.00	51.00
30	Davis (Bloomfield)	8	1,100	89.12	108.20
31	Davis (Pulaski)	15	2,400	17.84	164.50
32	Decatur	10	2,250	53.24	------------
33	Delaware	7	7,200	------------	63.15
34	Des Moines	3	3,000	46.20	461.85
35	Dickinson	11	900	296.04	153.15
36	Dubuque	7	1,800	35.00	75.75
37	Emmet	7	2,800	111.79	74.50
38	Fayette	4	1,000	------------	198.50
39	Floyd	6	400	16.61	14.00
40	Fremont	7	1,700	------------	------------
41	Grundy	6	2,700	87.05	95.78
42	Hamilton	14	900	36.30	95.85
43	Hancock	5	1,250	3.07	23.50
44	Hardin	16	3,100	159.25	297.30
45	Harrison	6	1,500	------------	15.00
46	Henry	5	750	92.00	296.60
47	Iowa	8	1,000	81.00	29.00
48	Jackson	5	1,750	3.75	60.00
49	Jasper	13	600	3.42	122.17
50	Jefferson	10	1,800	177.85	88.31
51	Johnson	10	3,000	30.08	1,020.45

FARMERS INSTITUTES IN IOWA

1913, to JUNE 30, 1914.

Receipts		Disbursements						
State Aid	Total Receipts	For Speakers and Judges	Premiums	Miscellaneous Expenses	Total Disbursements	Cash on hand	Overdrafts	Number
$ 75.00	$ 119.19	$ 11.94	$ 26.50	$ 39.70	$ 78.14	$ 41.05	----------	1
75.00	430.18	36.53	154.00	50.76	241.29	188.89	----------	2
25.00	385.95	19.48	218.54	56.50	294.52	91.43	----------	3
25.00	305.41	33.42	152.23	25.00	210.65	94.76	----------	4
25.00	503.24	30.00	290.59	140.00	460.59	42.65	----------	5
25.00	408.32	55.92	134.00	171.60	361.52	46.80	----------	6
25.00	189.50	42.30	67.00	80.20	189.50	----------	----------	7
25.00	363.75	60.00	240.00	15.00	315.00	48.75	----------	8
75.00	112.45	25.00	----------	74.58	99.58	12.87	----------	9
37.50	768.60	10.63	458.25	130.65	599.53	169.07	----------	10
37.50	121.74	12.73	48.00	22.70	83.43	38.31	----------	11
75.00	93.80	42.44	----------	51.36	93.80	----------	----------	12
75.00	106.99	30.60	10.00	45.00	85.60	21.39	----------	13
25.00	475.90	132.38	211.90	44.62	388.90	87.00	----------	14
25.00	518.72	45.85	389.00	55.90	490.75	27.97	----------	15
25.00	339.20	64.45	50.51	129.82	244.78	94.42	----------	16
75.00	228.37	39.65	56.00	84.83	180.48	47.89	----------	17
51.55	61.55	29.00	----------	22.55	51.55	10.00	----------	18
37.50	448.90	37.56	215.50	167.57	420.63	28.27	----------	19
37.50	109.04	12.05	60.50	13.40	85.95	23.09	----------	20
75.00	131.00	40.15	56.00	34.85	131.00	----------	----------	21
37.50	186.38	15.00	31.25	36.40	82.65	103.73	----------	22
37.50	343.00	105.00	100.00	202.85	407.85	----------	64.85	23
75.00	325.48	41.50	163.00	90.16	294.66	30.82	----------	24
75.00	481.84	87.88	2.25	139.80	229.93	251.91	----------	25
37.50	137.50	73.00	81.00	18.00	172.00	----------	34.50	26
37.50	960.03	390.86	144.05	394.56	929.47	30.56	----------	27
75.00	802.30	77.78	466.00	238.44	782.22	20.08	----------	28
75.00	143.00	27.49	59.00	42.00	128.49	14.51	----------	29
37.50	234.82	----------	96.75	80.65	177.40	57.42	----------	30
37.50	219.84	43.95	44.00	52.05	140.00	79.84	----------	31
75.00	128.24	63.69	----------	58.63	122.32	5.92	----------	32
75.00	138.15	75.00	----------	63.15	138.15	----------	----------	33
75.00	583.05	38.17	266.95	90.86	395.98	187.07	----------	34
75.00	•524.19	154.15	129.65	150.95	434.75	89.44	----------	35
75.00	185.75	73.00	41.50	55.50	170.00	15.75	----------	36
75.00	261.29	63.32	71.38	57.50	192.20	69.09	----------	37
75.00	273.50	46.80	75.25	36.80	158.85	114.65	----------	38
75.00	105.61	38.00	17.00	31.50	89.50	16.11	----------	39
75.00	75.00	50.58	205.50	21.65	277.73	----------	$ 202.73	40
75.00	257.83	83.76	90.00	84.07	257.83	----------	----------	41
75.00	207.15	55.90	110.10	41.10	207.10	.05	----------	42
71.01	97.58	27.70	12.40	30.91	71.01	26.57	----------	43
75.00	531.55	37.28	208.75	89.33	335.36	196.19	----------	44
41.95	56.95	19.75	----------	22.20	41.95	15.00	----------	45
75.00	463.60	55.27	341.00	47.24	443.51	20.09	----------	46
75.00	185.00	59.25	----------	46.50	105.75	79.25	----------	47
73.63	137.38	26.48	50.00	47.15	123.63	13.75	----------	48
75.00	200.59	49.62	114.95	47.59	212.16	----------	11.57	49
75.00	341.16	77.02	9.20	159.17	245.39	95.77	----------	50
75.00	1,125.53	61.20	725.20	112.15	898.55	226.98	----------	51

FINANCIAL STATEMENT OF COUNTY

Number	Counties	Number Sessions	Total Attendance	Receipts	
				Cash on hand	Miscellaneous Receipts
52	Keokuk	11	2,000	4.23	140.95
53	Kossuth	6	2,400	46.53	120.00
54	Lee	14	650	198.48	580.96
55	Linn (Walker)	8	1,000	16.80	100.27
56	Linn (Marion)	5	600	------------	38.70
57	Lucas	7	2,000	52.40	22.75
58	Lyon	13	2,775	13.19	422.00
59	Mahaska	10	4,000	408.01	1,075.91
60	Marshall	14	775	------------	14.25
61	Mills	7	1,500	------------	47.00
62	Monona	18	1,200	19.20	245.00
63	Montgomery (Stanton)	9	1,385	44.64	295.90
64	Montgomery (Grant)	5	565	53.41	280.31
65	Muscatine	6	1,675	1.29	------------
66	O'Brien	8	2,987	63.12	98.85
67	Page	8	4,000	------------	429.25
68	Palo Alto	4	900	49.00	25.00
69	Pocahontas (Laurens)	10	3,000	71.09	178.30
70	Pocahontas (Rolfe)	21	2,100	------------	539.70
71	Polk	38	4,000	552.67	2,080.59
72	Poweshiek	6	900	------------	89.50
73	Ringgold	8	1,500	52.28	200.05
74	Scott (Eldridge)	7	300	1.34	384.20
75	Scott (Princeton)	5	2,050	11.08	321.50
76	Scott (Dixon)	6	1,800	.72	233.47
77	Shelby	5	1,450	------------	123.35
78	Sioux	8	3,710	4.44	559.05
79	Story (Maxwell)	7	950	136.54	134.55
80	Story (Roland)	4	500	------------	84.00
81	Tama	12	1,300	49.00	302.50
82	Taylor	13	975	------------	47.50
83	Union	6	1,550	54.75	46.40
84	Van Buren	19	900	4.00	------------
85	Wapello (Ottumwa)	9	1,800	8.23	360.65
86	Wapello (Eldon)	13	1,050	44.63	400.40
87	Warren	4	600	368.74	100.68
88	Wayne	12	4,000	72.77	225.54
89	Webster	17	2,100	149.68	242.55
90	Woodbury	4	600	42.13	262.00
91	Worth	14	2,400	15.75	201.65
	Totals	799	153,277	$ 5,804.49	$ 20,857.83

FARMERS INSTITUTES IN IOWA—CONTINUED

Receipts		Disbursements						
State Aid	Total Receipts	For Speakers and Judges	Premiums	Miscellaneous Expenses	Total Disbursements	Cash on hand	Overdrafts	Number
75.00	220.18	17.36	------------	184.13	201.49	18.69	----------	52
75.00	241.53	46.65	------------	50.04	96.69	144.84	----------	53
75.00	854.44	133.87	340.00	80.71	554.58	299.86	----------	54
37.50	154.57	32.14	33.25	20.07	85.46	69.11	----------	55
37.50	76.20	43.37	------------	11.55	54.92	21.28	----------	56
75.00	150.15	18.62	60.85	26.00	105.47	44.68	----------	57
75.00	510.19	195.07	91.50	265.84	552.41	----------	42.22	58
75.00	1,558.92	53.89	794.93	298.74	1,147.56	411.36	----------	59
75.00	89.25	29.00	------------	62.87	91.87	----------	2.62	60
44.00	91.00	------------	47.00	44.00	91.00	----------	----------	61
75.00	339.20	30.00	121.25	112.14	263.39	75.81	----------	62
37.50	378.04	62.10	237.50	66.90	366.50	11.54	----------	63
37.50	371.22	49.88	166.00	81.22	297.10	74.12	----------	64
75.00	76.29	22.53	22.75	33.29	78.57	----------	2.28	65
75.00	236.97	51.08	58.00	58.95	168.03	68.94	----------	66
75.00	504.25	68.65	537.15	350.07	955.87	----------	451.62	67
56.20	130.20	26.00	19.00	11.20	56.20	74.00	----------	68
37.50	286.89	83.87	59.50	78.97	222.34	64.55	----------	69
37.50	577.20	89.14	171.50	379.28	639.92	----------	62.72	70
75.00	2,708.26	89.45	1,448.19	208.19	1,745.83	962.43	----------	71
75.00	164.50	30.50	114.00	20.00	164.50	----------	----------	72
75.00	327.33	32.04	114.50	111.62	258.16	69.17	----------	73
25.00	410.54	116.28	153.00	87.88	357.16	53.38	----------	74
25.00	357.58	26.30	155.00	123.30	304.60	52.98	----------	75
25.00	259.19	22.35	70.50	88.50	181.35	77.84	----------	76
75.00	198.35	31.96	118.00	105.32	255.28	----------	56.93	77
75.00	638.49	64.76	284.00	169.51	518.27	120.22	----------	78
37.50	308.59	17.56	126.14	38.35	182.05	126.54	----------	79
37.50	121.50	27.12	32.00	27.10	86.22	35.28	----------	80
75.00	426.50	49.48	331.00	22.50	402.98	23.52	----------	81
75.00	122.50	42.45	25.00	27.20	94.65	27.85	----------	82
75.00	176.15	17.40	60.75	35.28	113.43	62.72	----------	83
75.00	79.00	28.25	15.00	36.00	79.25	----------	.25	84
37.50	406.38	27.89	156.50	148.10	332.49	73.89	----------	85
37.50	482.53	35.16	300.00	72.29	407.45	75.08	----------	86
75.00	544.42	12.88	103.50	54.85	171.23	373.19	----------	87
75.00	373.31	47.32	137.50	107.94	292.76	80.55	----------	88
75.00	467.23	32.84	113.25	110.28	256.37	210.86	----------	89
75.00	379.13	89.71	105.50	124.61	319.82	59.31	----------	90
75.00	292.40	51.11	40.00	52.36	143.47	148.93	----------	91
$ 5,363.34	$ 32,025.66	$ 4,776.51	$ 13,258.16	$ 8,035.60	$26,070.27	$6,887.68	$ 932.29	

FINANCIAL STATEMENT OF SHORT
FOR THE YEAR

Counties	Number Sessions	Total Attendance	Receipts Cash on hand	 Miscellaneous Receipts
Adair	26	250	$ 90.00	$ 712.36
Carroll	25	3.200	182.71	938.35
Crawford	24	3,350		1,459.25
Dallas	16	575		914.05
Decatur	58	7,500		777.30
Dubuque	27	1,400	279.02	583.98
Guthrie	27	1,600	41.50	520.00
Hamilton	26	3,300	282.92	826.99
Howard	15	3,500		902.50
Louisa	27	6,300		1,132.39
Lucas	26	525	54.51	497.45
Madison	38	5,350		1,630.65
Marion	30	5,500		1,882.24
Mitchell	24	520	43.93	906.45
Palo Atlo	39	3,000	124.93	625.87
Polk	22	3,000	55.00	555.95
Pottawattamie	22	1,200		401.00
Winnebago (Forest City)	36	7,272	642.36	560.00
Winnebago (Buffalo Center)	24	2,500		1,055.64
Winneshiek	28	3,000	85.30	768.85
Totals	560	62,842	$ 1,882.18	$ 17,651.57

COURSE ASSOCIATIONS OF IOWA

ENDING JUNE 30, 1914.

Receipts		Disbursements					
State Aid	Total Receipts	For Speakers and Judges	Premiums	Miscellaneous Expenses	Total Disbursements	Cash on hand	Overdrafts
$ 200.00	$ 1,002.36	$ 82.00	$ 571.97	$ 343.39	$ 997.36	$ 5.00	----------
75.00	1,196.06	336.86	288.02	441.64	1,066.52	129.54	----------
75.00	1,534.25	159.81	884.15	500.79	1,544.75	----------	10.50
200.00	1,114.05	246.99	513.50	244.49	1,004.98	109.07	----------
165.62	942.92	172.00	414.05	285.36	871.41	71.51	----------
184.90	1,047.90	110.04	462.25	337.43	909.72	138.18	----------
75.00	636.50	275.00	15.00	319.58	609.58	26.92	----------
200.00	1,309.91	132.20	576.00	375.59	1,083.79	226.12	----------
236.20	1,138.70	420.00	321.75	427.00	1,168.75	----------	30.05
75.00	1,207.39	352.52	93.75	436.44	882.71	324.68	----------
150.20	702.16	40.75	330.50	145.03	516.28	185.88	----------
275.00	1,905.65	203.47	905.90	777.87	1,887.24	18.41	----------
75.00	1,957.24	454.98	620.00	503.22	1,578.20	379.04	----------
75.00	1,025.38	141.20	223.00	593.30	957.50	67.88	----------
78.10	828.90	253.25	195.25	178.91	627.41	201.49	----------
164.00	774.95	87.95	314.50	165.44	567.89	207.06	----------
75.00	476.00	20.00	----------	595.25	615.25	----------	139.25
37.50	1,240.16	327.39	75.00	264.36	666.75	573.41	----------
37.50	1,093.14	252.19	85.00	522.15	859.34	233.80	----------
75.00	929.15	150.00	95.68	741.07	986.75	----------	57.60
$ 2,529.02	$22,062.77	$ 4,218.60	$ 6,985.27	$ 8,198.31	$19,402.18	$ 2,897.99	$ 237.40

COUNTY AND DISTRICT FAIRS.

During the year 1914 there were ninety county and district fairs held in the State of Iowa, or one less than during the previous year. Twenty-four counties in the State held no fairs. The counties of Clayton and Iowa held three each and the counties of Black Hawk, Calhoun, Chickasaw, Henry, Jones, Lee, Linn, Marshall, O'Brien, Page and Poweshiek held two each.

The Department has compiled four tables which give detailed information relative to these fairs. Table No. 1 shows the balance on hand at the beginning of the year; receipts of the fair and receipts from other sources, such as borrowed money, sale of stock, subscriptions, etc., and the total receipts. The disbursements show the total expense of fair, indebtedness of previous years paid, cost of improvements made during the year 1914, the total disbursements, balance or overdraft November 1, 1914, value of grounds and buildings and the present interest bearing indebtedness.

Table No. 2 takes into consideration the receipts and disbursements of the fairs only. This table shows receipts from the outside gates, grand stand, entry fees, speed department, concessions and privileges, miscellaneous receipts of fairs, state aid received, and total receipts of fair. The disbursements show premiums paid in all departments other than speed; speed premiums paid; cost of music and attractions; miscellaneous expense of fair, and total disbursements.

There is also a column showing the profit or loss on the 1914 fair.

Table No. 3 deals with the exhibit departments of the fairs and shows the number of exhibitors in all departments, number of exhibitors in the live stock departments, number of horses, cattle, swine, sheep and poultry on exhibition, and the amount of cash premiums in each of these divisions; also the amount of cash premiums paid on agricultural products, pantry and kitchen products, fine arts and miscellaneous departments.

Table No. 4 shows the total attendance of the fair and the total paid admissions. It also indicates the fee charged for adults, vehicles and children at the outside gates and the admission fee to the grandstand; also the admission fee for vehicles and persons to the quarter-stretch.

Fourteen fairs paid premiums in excess of $1,500.00 each and were paid the full $300.00 state aid. The following sets forth the amount of premiums paid by each:

Inter-State Live Stock Fair, Sioux City	$8,167.50
Dairy Cattle Congress, Waterloo	4,840.00
Marshall County Fair Association, Marshalltown	3,138.50
North Iowa Fair, Mason City	3,089.30
Bremer County Fair Association, Waverly	2,545.30
Henry County Agricultural Society, Mt. Pleasant	2,300.00
Union District Agricultural Society, West Liberty	2,154.50
Cedar Valley District Fair Association, Cedar Falls	1,800.10
Tama County Fair Association, Toledo	1,677.35

Clinton County Agricultural Society, De Witt.......	1,655.50
Shenandoah Fair Association, Shenandoah..........	1,629.15
Warren County Agricultural Society, Indianola......	1,613.25
Cass County Fair Association, Atlantic..............	1,570.14
West Point District Agricultural Society, West Point.	1,501.75

The matter of state or county aid for Iowa county and district fairs should have the attention of the legislature at the next session. We find on examining the financial statement of the ninety fairs reporting to the department this year that a great many of them had a hard struggle to pay their operating expenses to asy nothing about making needed improvementments and maintenance of the plant. In fact thirty-six out of the ninety met with a loss on their 1914 fairs.

Under our present Iowa law county and district fairs may receive state aid to the extent of $300.00; this is paid on the basis of 40 per cent of the first $500.00 and 10 per cent of the next $1000.00 paid out in premiums in all departments except speed. Under this law the state paid to the fairs in 1914, $21,131.27; in 1913, $20,205.17; in 1912, $20,860.32. The average amount received by each fair in 1914 was $235.

We find by referring to the laws and reports of our neighboring states upon this subject that they are much more liberal with their aid to agricultural fairs.

In the State of Illinois the county and district fairs receive from the state 60 per cent of the first $1000.00 paid in premiums; 50 per cent of the second $1000.00; 40 per cent of the next $2000.00 and 30 per cent of all premiums paid in excess of $4000.00.

Under this law the State of Illinois reimbursed the county and district fairs for premiums paid to the extent of $82,022.75 in 1914; $62,670.00 in 1913 and $61,600.00 in 1912.

During the year 1913 there were 69 county fairs held in the state of Illinois that received from the state an average of $908.00 each. The average for 1914 will be much larger but we have been unable to get a detailed report of the 1914 fairs. The state aid paid Illinois fairs in 1913 ranged from $222.26 to $2,219.53. Twenty-two drew over $1000.00 and three of these over $2000.00 each.

The State of Minnesota reimburses the county and district fairs for all premiums paid to exhibitors up to $1,500.00. During the year 1913 there were ninety fairs held in Minnesota and the State reimbursed them in the sum of $91,666.00, or an average of $1,918.00 each.

The State of Wisconsin pays 80 per cent of all premiums actually paid by the county and district fairs, except for speed contests. There is, however, a provision in their law which provides that no county agricultural society shall receive to exceed $2500.00 state aid in any one year. During the year 1912 Wisconsin held 76 county and district fairs and they received $109,900.00 state aid, or an average of $1,446.00 each.

New York appropriates $250,000 annually for the support of her county and district fairs. There is a provision in their law which provides that no fair shall receive state aid to exceed $4000.00 in any one year. The Department of Agriculture receives the reports of the fairs and pays the state aid to each society in proportion to the amount paid in premiums.

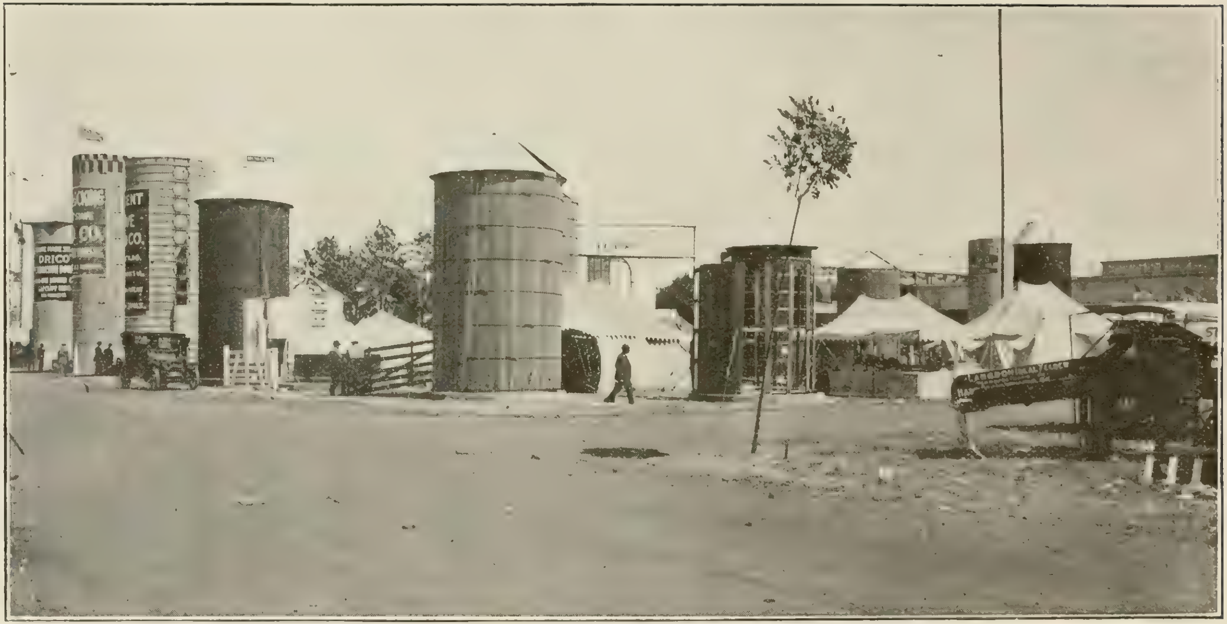
During the year 1913 there were 88 county fairs held in that state; fifteen of these fairs received the limit of $4,000.00 and the average amount received by all fairs was $2,841.00.

The State of Ohio pays the county and district fairs on a basis of two cents for each inhabitant of the county. They have a provision in their law providing that the state aid paid to any fair shall not exceed the sum of $800.00 in any one year. Ohio held 88 fairs in 1914 and 78 received the full amount of state aid.

In the State of Nebraska the county and district fairs receive from the county treasurer a sum equal to five cents for each inhabitant in the county, upon the basis of the last vote for the Member of Congress in said county, allowing five inhabitants for each vote.

In the State of Missouri the county and district fairs receive from the state an amount equal to 30 per cent of the premiums paid. They have a provision in their law to the effect that no fair shall receive to exceed $300.00. In addition to this the county may appropriate $100.00 for premiums to be awarded at the fairs in accordance with the rules and regulations of the society. In counties having seventy thousand inhabitants or more the county may appropriate $1,000.00 for the same purpose.

In the State of Indiana the county commissioners may appropriate and pay to agricultural fair associations a sum equal to one cent on the hundred dollars valuation of the taxable property of such county. This money must be used in the payment of premiums on agricultural and horticultural products and live stock.



One corner of the Silo Exhibit at the 1914 Iowa State Fair and Exposition.

TABLE NO. I—FINANCIAL STATEMENT OF COUNTY AND

Number	County	City or Town	Balance on hand	Receipts		
				Receipts of fair	Receipts from sources other than fair	Total receipts
1	Adair	Greenfield	----------	$ 3,043.72	$ 2,400.00	$ 5,443.72
2	Adams	Corning	$ 186.84	4,980.11	----------	5,166.95
3	Allamakee	Waukon	----------	4,656.27	----------	4,656.27
4	Audubon	Audubon	43.06	4,944.72	----------	4,987.78
5	Benton	Vinton	230.25	1,813.25	2,200.00	4,243.50
6	Black Hawk	Waterloo	----------	15,516.40	2,685.00	18,201.40
7	Black Hawk	Cedar Falls	----------	13,165.48	42,810.19	55,975.67
8	Boone	Ogden	----------	1,659.40	----------	1,659.40
9	Bremer	Waverly	4,703.42	17,158.85	3,000.00	24,862.27
10	Buchanan	Independence	13.08	8,055.52	----------	8,068.60
11	Buena Vista	Alta	192.28	6,683.75	----------	6,876.03
12	Butler	Allison	----------	3,287.59	1,432.62	4,720.21
13	Calhoun	Manson	985.45	2,537.97	84.56	3,607.98
14	Calhoun	Rockwell City	86.58	5,475.49	----------	5,562.07
15	Caroll	Carroll	----------	3,200.32	1,197.65	4,397.97
16	Cass	Atlantic	463.66	7,130.55	1,141.50	8,735.71
17	Cedar	Tipton	628.44	2,996.17	----------	3,624.61
18	Cerro Gordo	Mason City	----------	17,947.23	354.50	18,301.73
19	Chickasaw	Nashua	----------	4,157.57	----------	4,157.57
20	Chickasaw	New Hampton	536.47	2,311.52	----------	2,847.99
21	Clay	Spencer	----------	226.45	----------	226.45
22	Clayton	National	18.99	1,677.28	----------	1,696.27
23	Clayton	Strawberry Point	231.54	4,215.12	1,330.00	5,776.66
24	Clayton	Elkader	100.00	3,480.29	352.65	3,932.94
25	Clinton	De Witt	48.59	6,926.64	1,701.00	8,676.23
26	Crawford	Arion	146.88	2,242.56	10.00	2,399.44
27	Davis	Bloomfield	139.94	4,378.34	----------	4,518.28
28	Delaware	Manchester	----------	2,750.12	----------	2,750.12
29	Dickinson	Spirit Lake	57.70	1,197.16	80.00	1,334.86
30	Fayette	West Union	1,663.68	9,155.97	10.67	10,830.32
31	Greene	Jefferson	----------	4,427.14	439.03	4,866.17
32	Grundy	Grundy Center	1,174.01	3,378.18	39.00	4,591.19
33	Guthrie	Guthrie Center	----------	4,843.90	----------	4,843.90
34	Hancock	Britt	85.00	3,938.42	----------	4,023.42
35	Hardin	Eldora	228.92	5,039.15	----------	5,268.07
36	Harrison	Missouri Valley	34.56	3,128.10	----------	3,162.66
37	Henry	Mt. Pleasant	1,903.84	10,332.95	----------	12,236.79
38	Henry	Winfield	36.25	3,682.41	25.00	3,743.66
39	Humboldt	Humboldt	----------	6,824.88	----------	6,824.88
40	Iowa	Marengo	307.05	3,269.27	----------	3,576.32
41	Iowa	Victor	136.00	2,167.22	----------	2,303.22
42	Iowa	Williamsburg	----------	1,215.43	----------	1,215.43
43	Jackson	Maquoketa	572.76	5,581.47	----------	6,154.23
44	Jasper	Newton	157.59	6,364.15	500.00	7,021.74
45	Jefferson	Fairfield	311.44	6,927.40	----------	7,238.84
46	Johnson	Iowa City	----------	1,494.36	2,267.30	3,761.66
47	Jones	Anamosa	815.41	8,677.38	----------	9,492.79
48	Jones	Monticello	1,538.30	5,702.22	----------	7,240.52
49	Keokuk	What Cheer	531.22	4,013.22	----------	4,544.44
50	Kossuth	Algona	150.00	6,972.27	4,000.00	11,122.27
51	Lee	Donnellson	----------	3,263.78	----------	3,263.78
52	Lee	West Point	94.99	4,575.47	74.00	4,744.46
53	Linn	Central City	----------	4,568.90	550.00	5,118.90
54	Linn	Marion	26.70	6,541.51	----------	6,568.21
55	Louisa	Columbus Jct.	----------	6,425.60	733.00	7,158.60
56	Lyon	Rock Rapids	3,389.16	11,710.19	----------	15,099.35
57	Mahaska	New Sharon	313.67	2,172.78	53.65	2,540.10
58	Marion	Pella	223.48	1,687.06	----------	1,910.54
59	Marshall	Rhodes	----------	1,358.96	----------	1,358.96
60	Marshall	Marshalltown	2,190.71	12,734.66	3,911.00	18,836.37

DISTRICT FAIRS IN IOWA RECEIVING STATE AID 1914.

Disbursements				Balance or Overdraft		Assets and Liabilities		
Expense of fair	Indebtedness of previous years paid	Improvements 1914	Total disbursements	Balance Nov. 1, 1914	Overdraft Nov. 1, 1914	Value of grounds and buildings	Present indebtedness	Number
$ 2,720.01	$ 1,511.61	$ 1,192.61	$ 5,424.23	$ 19.49		$ 12,000.00	$ 800.00	1
4,497.49		598.00	5,095.49	71.44		6,000.00		2
3,458.50	550.00	150.00	4,158.50	497.77		6,000.00		3
3,617.75	41.00		3,658.75	1,329.03		8,000.00		4
4,076.10		489.84	4,565.94		$ 322.44	8,000.00	4,000.00	5
13,224.05	2,648.88	1,060.92	16,933.85	1,267.55		25,000.00	10,600.00	6
11,206.44		43,638.24	54,844.68	1,130.99		65,000.00	22,150.00	7
2,278.50			2,278.50		619.10	10,000.00	4,500.00	8
15,171.38		9,643.70	24,815.08	47.19		24,000.00	3,000.00	9
7,174.61		613.33	7,787.94	280.66			3,300.00	10
5,624.03	189.38	24.45	5,837.86	1,038.17		10,000.00	2,600.00	11
3,687.60	322.49	400.00	4,410.09	310.12		2,100.00	1,100.00	12
3,252.64		340.27	3,592.91	15.07		8,000.00	1,700.00	13
4,877.05		350.00	5,227.05	335.00		16,000.00	1,500.00	14
4,555.08	3,449.05	399.67	8,403.80		4,005.83	11,000.00	4,000.00	15
7,447.54		1,307.02	8,754.56		18.85	25,000.00	500.00	16
3,688.73		171.50	3,860.23		235.62	12,000.00		17
16,597.06		3,942.85	20,539.91		2,238.18	29,000.00	3,200.00	18
2,747.25	1,000.00	400.00	4,147.25	10.33			3,400.00	19
2,425.83		150.00	2,575.83	272.16		7,000.00		20
769.50			769.50		543.05			21
2,166.74			2,166.74		470.47	5,000.00	2,600.00	22
4,194.06	102.00	1,404.81	5,700.87	75.79		8,000.00	3,000.00	23
3,822.40	135.00	75.00	4,032.40		99.46	9,000.00	4,500.00	24
8,358.50		192.50	8,551.00	125.23			1,500.00	25
2,351.36			2,351.36	48.08		2,000.00		26
4,143.46		165.00	4,308.46	209.82		16,000.00	1,650.00	27
3,384.85		250.00	3,634.85		884.73	8,000.00	4,342.17	28
2,532.92			2,532.92		1,198.06	7,500.00		29
6,430.57	269.33	1,772.08	8,471.98	2,358.34		18,000.00		30
3,903.42	850.53		4,753.95	112.22		18,000.00	8,000.00	31
3,045.98	19.70	38.46	3,104.14	1,487.05		8,000.00		32
3,792.24	1,645.00		5,437.24		593.34	6,000.00		33
2,658.25		200.00	2,858.25	1,165.17		6,000.00	2,000.00	34
6,432.71	125.00	427.42	6,985.13		1,717.06		350.00	35
2,315.38			2,315.38	847.28		10,000.00	830.00	36
7,747.92		1,238.87	8,986.79	3,250.00		32,000.00		37
3,265.51		31.30	3,296.81	446.85			1,950.00	38
6,474.88			6,474.88	350.00		18,000.00		39
2,778.36	208.69	272.96	3,260.01	316.31		5,000.00	2,500.00	40
2,319.80			2,319.80		16.58	4,500.00	1,600.00	41
994.40		380.99	1,375.39		159.96	6,820.00	2,522.86	42
4,709.21	520.00	344.14	5,573.35	580.85		12,000.00	3,000.00	43
5,821.74		1,125.00	6,946.74	75.00		20,000.00	2,800.00	44
4,891.18	1,777.90	500.00	7,169.08	69.76		12,000.00		45
2,731.51	44.91	687.27	3,463.69	297.97		20,000.00	8,630.00	46
7,375.80	1,706.25	1,008.60	10,090.65		597.86	10,000.00	2,500.00	47
5,168.62		1,456.26	6,624.88	615.64		6,500.00		48
2,698.81		126.52	2,825.33	1,719.11		10,000.00		49
5,740.07		5,353.30	11,093.37	28.90		30,000.00	5,400.00	50
2,762.00	259.58	300.74	3,322.32		58.54			51
3,943.42	138.00	491.36	4,572.78	171.68		5,500.00	2,500.00	52
4,183.84	156.00	309.00	4,648.84	470.06		10,000.00	2,600.00	53
5,338.55	1,030.60		6,369.15	199.06		14,000.00	7,100.00	54
5,700.14	900.00	360.71	6,960.85	197.75		10,000.00	2,500.00	55
9,279.86		1,872.09	11,151.95	3,947.60				56
2,540.40			2,540.40		.30	6,500.00		57
1,963.36	149.00	577.83	2,690.19		779.65		2,300.00	58
1,288.30	90.70	7.80	1,386.80		27.84	2,500.00		59
13,180.87		5,545.43	18,726.30	110.07		27,500.00	3,500.00	60

TABLE NO. I

Number	County	City or Town	Balance on hand	Receipts		
				Receipts of fair	Receipts from sources other than fair	Total receipts
61	Mills	Malvern	----------	5,483.45	----------	5,483.45
62	Mitchell	Osage	----------	2,434.15	----------	2,434.15
63	Monona	Onawa	96.27	3,197.75	250.00	3,544.02
64	Monroe	Albia	----------	6,445.14	250.00	6,695.14
65	Muscatine	West Liberty	337.05	8,448.20	----------	8,785.25
66	Muscatine	Wilton	105.08	3,360.93	----------	3,466.01
67	O'Brien	Sheldon	306.30	7,252.18	----------	7,558.48
68	O'Brien	Sutherland	8.34	2,061.17	1,032.00	3,101.51
69	Page	Clarinda	633.41	13,417.80	325.00	14,376.21
70	Page	Shenandoah	----------	10,042.69	2,450.00	12,492.69
71	Pocahontas	Fonda	266.41	6,957.87	----------	7,224.28
72	Pottawattamie	Avoca	----------	6,331.84	3,000.00	9,331.84
73	Poweshiek	Grinnell	580.34	2,976.24	----------	3,556.58
74	Poweshiek	Malcom	23.73	2,826.67	800.00	3,650.40
75	Sac	Sac City	359.50	8,830.71	----------	9,190.21
76	Shelby	Harlan	240.44	6,498.47	800.00	7,538.91
77	Sioux	Orange City	321.83	3,161.35	----------	3,483.18
78	Story	Ames	----------	3,287.55	865.00	4,152.55
79	Tama	Toledo	----------	6,001.49	----------	6,001.49
80	Taylor	Bedford	----------	4,350.17	----------	4,350.17
81	Van Buren	Milton	154.19	2,405.15	----------	2,559.34
82	Wapello	Eldon	55.41	4,812.48	3,613.50	8,481.39
83	Warren	Indianola	308.50	4,051.10	755.00	5,114.60
84	Wayne	Sewal	151.44	669.88	233.70	1,055.02
85	Webster	Ft. Dodge	----------	3,564.54	2,519.05	6,083.59
86	Winnebago	Forest City	----------	3,014.34	1,800.00	4,814.34
87	Winneshiek	Decorah	----------	3,732.05	1,033.99	4,766.04
88	Woodbury	Sioux City	9,456.10	40,329.31	----------	4,979.41
89	Worth	Northwood	296.55	2,320.19	----------	2,616.74
90	Wright	Clarion	----------	5,986.00	----------	5,986.00
			$38,398.80	$504,241.80	$ 93,118.86	$635,759.46

—CONTINUED.

Disbursements				Balance or Overdraft		Assets and Liabilities		
Expense of fair	Indebtedness of previous years paid	Improvements 1914	Total disbursements	Balance Nov. 1, 1914	Overdraft Nov. 1, 1914	Value of grounds and buildings	Present indebtedness	Number
5,031.55	------------	2,000.00	7,031.55	----------	1,548.10	20,000.00	------------	61
2,885.50	95.63	------------	2,981.13	----------	546.98	6,000.00	------------	62
3,057.38	91.22	363.28	3,511.88	32.14	----------	7,500.00	3,630.00	63
4,665.88	553.47	------------	5,219.35	1,475.79	----------	------------	2,000.00	64
5,916.58	------------	860.75	6,777.33	2,007.92	----------	------------	------------	65
3,667.74	------------	------------	3,667.74	----------	201.73	------------	------------	66
6,463.16	------------	770.00	7,233.16	325.31	----------	15,000.00	------------	67
2,950.45	------------	1,100.00	4,050.45	----------	948.94	7,500.00	2,200.00	68
8,656.59	1,400.00	204.22	10,260.81	4,115.40	----------	3,000.00	------------	69
8,631.65	3,420.57	69.88	12,122.10	370.59	----------	25,000.00	------------	70
6,360.38	------------	600.00	6,960.38	263.90	----------	10,000.00	------------	71
6,460.65	2,676.62	223.30	9,360.57	----------	28.73	------------	3,000.00	72
3,449.49	------------	389.59	3,839.08	----------	282.50	15,000.00	------------	73
2,865.10	210.85	555.93	3,631.88	18.52	----------	8,000.00	300.00	74
7,706.35	------------	------------	7,706.35	1,483.86	----------	16,000.00	------------	75
6,505.44	22.50	808.55	7,336.49	202.42	----------	15,000.00	------------	76
2,788.64	48.62	------------	2,837.26	645.92	----------	6,000.00	600.00	77
3,803.52	772.18	72.19	4,647.89	----------	495.34	2,500.00	------------	78
4,580.29	519.00	150.00	5,249.29	752.17	----------	15,000.00	8,650.00	79
3,873.92	------------	------------	3,873.92	476.25	----------	4,500.00	------------	80
2,349.15	504.00	------------	2,853.15	----------	293.31	6,000.00	3,500.00	81
4,663.28	3,233.15	393.90	8,290.33	191.06	----------	6,000.00	3,100.00	82
4,451.87	------------	225.00	4,676.87	437.73	----------	------------	------------	83
893.25	------------	50.00	943.25	111.77	----------	------------	------------	84
5,624.41	------------	924.85	6,549.26	----------	465.67	20,000.00	1,000.00	85
3,267.02	1,669.30	203.50	5,139.82	----------	325.48	8,000.00	3,000.00	86
4,766.04	------------	------------	4,766.04	----------	----------	------------	1,033.99	87
36,461.93	------------	564.00	37,025.93	12,769.48	----------	200,000.00	------------	88
1,979.20	------------	108.62	2,087.82	528.92	----------	4,000.00	------------	89
5,954.70	75.59	------------	6,030.29	----------	44.29	12,000.00	------------	90
$446,259.64	$ 35,133.30	$102,025.40	$603,418.34	$52,118.35	$19,760.99	$1,100,420.00	$184,539.02	

TABLE NO. II—RECEIPTS AND DISBURSEMENTS

Number	County and City or Town	Receipts				
		Ticket Sales				
		Outside gates	Grand stand	Entry fees, speed department	Concessions and pivileges	Mincellaneous receipts of fair
1	Adair, Greenfield	$ 2,053.35	$ 119.10	$ 109.25	$ 351.55	$ 186.05
2	Adams, Corning	3,117.10	----------	971.25	----------	682.45
3	Allamakee, Waukon	3,015.80	307.90	620.00	527.97	----------
4	Audubon, Audubon	3,259.45	420.00	421.25	599.75	----------
5	Benton, Vinton	900.00	93.50	----------	----------	616.78
6	Black Hawk, Waterloo	6,416.40	----------	----------	390.00	8,410.00
7	Black Hawk, Cedar Falls	7,374.95	3,213.24	791.50	1,471.79	14.00
8	Boone, Ogden	907.40	165.90	----------	236.00	175.00
9	Bremer, Waverly	7,942.90	1,847.90	398.00	2,098.20	4,571.85
10	Buchanan, Independence	4,746.60	871.75	180.00	700.00	1,323.70
11	Buena Vista, Alta	4,293.55	330.00	470.00	1,072.85	278.80
12	Butler, Allison	2,434.00	125.00	127.50	315.95	60.76
13	Calhoun, Manson	1,753.25	157.85	----------	272.00	104.77
14	Calhoun, Rockwell City	2,423.90	565.00	917.50	934.50	412.07
15	Carroll, Carroll	1,415.40	381.00	353.00	806.15	43.00
16	Cass, Atlantic	4,662.05	----------	552.80	523.95	1,091.75
17	Cedar, Tipton	1,8[illegible]0.30	389.35	----------	188.45	300.95
18	Cerro Gordo, Mason City	9,042.30	3,260.10	1,412.00	2,849.33	1,083.50
19	Chickasaw, New Hampton	1,705.05	90.90	----------	208.00	101.50
20	Chickasaw, Nashua	1,898.40	307.65	----------	347.25	1,370.70
21	Clay, Spencer	----------	----------	----------	23.50	----------
22	Clayton, National	903.50	37.60	----------	74.00	438.34
23	Clayton, Strawberry Point	2,458.90	471.05	170.50	352.25	533.77
24	Clayton, Elkader	2,419.50	240.75	220.00	312.00	75.00
25	Clinton, De Witt	3,187.88	1,056.76	447.50	544.38	1,390.12
26	Crawford, Arion	1,373.70	125.00	121.25	322.50	94.45
27	Davis, Bloomfield	2,335.25	----------	647.50	370.50	796.55
28	Delaware, Manchester	1,939.45	----------	70.00	261.00	283.53
29	Dickinson, Spirit Lake	513.75	----------	166.56	61.15	216.50
30	Fayette, West Union	5,836.75	836.55	587.50	1,182.90	460.22
31	Greene, Jefferson	2,852.25	739.80	----------	323.40	250.00
32	Grundy, Grundy Center	2,394.31	122.55	15.00	429.50	179.25
33	Guthrie, Guthrie Center	3,601.35	----------	361.25	668.70	----------
34	Hancock, Britt	2,172.95	218.65	720.00	492.00	134.00
35	Hardin, Eldora	2,730.75	320.75	960.00	550.00	200.00
36	Harrison, Missouri Valley	2,349.90	274.85	7.00	284.05	----------
37	Henry, Mt. Pleasant	5,536.90	786.55	1,357.00	1,280.00	1,072.50
38	Henry, Winfield	1,661.33	244.65	652.50	410.00	488.06
39	Humboldt, Humboldt	4,300.00	1,000.00	400.00	675.00	200.00
40	Iowa, Marengo	1,545.75	441.05	509.50	268.70	329.25
41	Iowa, Victor	1,080.50	276.20	255.00	358.75	90.05
42	Iowa, Williamsburg	572.71	275.90	5.00	163.00	23.50
43	Jackson, Maquoketa	2,654.85	681.50	523.75	649.20	813.05
44	Jásper, Newton	3,766.50	750.25	350.00	520.00	686.00
45	Jefferson, Fairfield	4,126.10	261.10	860.00	664.10	850.30
46	Johnson, Iowa City	183.75	28.25	210.00	10.00	827.82
47	Jones, Anamosa	4,855.21	1,421.45	609.00	862.90	710.75
48	Jones, Monticello	3,045.15	662.75	389.35	655.85	747.70
49	Keokuk, What Cheer	2,673.65	----------	560.00	363.00	190.92
50	Kossuth, Algona	4,050.00	598.75	605.00	770.00	673.15
51	Lee, Donnellson	1,907.35	----------	501.00	356.10	338.55
52	Lee, West Point	2,115.70	186.40	400.00	263.50	1,309.87
53	Linn, Central City	2,715.70	343.75	----------	665.25	596.60
54	Linn, Marion	4,258.70	651.30	365.00	269.50	761.27
55	Louisa, Columbus, Junction	3,628.75	857.55	811.25	525.00	320.80
56	Lyon, Rock Rapids	5,858.60	1,838.90	1,230.00	2,063.14	481.50
57	Mahaska, New Sharon	1,075.50	205.50	246.25	220.00	213.00
58	Marion, Pella	790.05	92.35	111.50	156.35	352.97
59	Marshall, Rhodes	898.65	----------	----------	147.00	112.90

OF COUNTY AND DISTRICT FAIRS IN IOWA 1914.

		Disbursements							
State aid	Total receipts of fair	Premiums other than for speed	Speed premiums	Music and attractions	Miscellaneous expense of fair	Total disbursements	Profit or loss	(—) (+)	Number
$ 224.42	$ 3,043.72	$ 744.20	$ 554.98	$ 870.00	$ 550.83	$ 2,720.01	$ 323.71	+	1
209.31	4,980.11	593.14	2,500.00	540.00	864.35	4,497.49	482.62	+	2
184.60	4,656.27	461.50	1,415.00	597.00	985.00	3,458.50	1,197.77	+	3
244.27	4,944.72	942.75	1,975.00	700.00	------------	3,617.75	1,326.97	+	4
203.57	1,813.85	535.75	460.40	500.00	2,579.95	4,076.10	2,262.25	—	5
300.00	15,516.40	4.840.00	------------	1,500.00	6,884.05	13,224.05	2,292.35	+	6
300.00	13,165.48	1,800.10	2,990.00	3,850.00	2,566.34	11,206.44	1,959.04	+	7
175.10	1,659.40	437.75	705.00	607.00	528.75	2,278.50	619.10	—	8
300.00	17,158.85	2,545.30	3,127.62	2,592.50	6,905.96	15,171.38	1,987.47	+	9
233.47	8,055.52	834.75	1,175.50	2,270.00	2,894.36	7,174.61	880.91	+	10
238.55	6,683.75	885.50	2,030.00	1,400.00	1,308.53	5,624.03	1,059.72	+	11
224.38	3,287.59	743.80	460.00	1,323.45	1,160.35	3,687.60	400.01	—	12
250.10	2,537.97	1,001.00	140.95	1,252.13	858.56	3,252.64	714.67	—	13
222.52	5,475.49	725.25	2,233.75	1,118.00	800.05	4,877.05	598.44	+	14
201.77	3,200.32	517.75	1,709.10	1,160.74	1,167.49	4,555.08	1,354.76	—	15
300.00	7,130.55	1,570.14	2,463.99	1,301.00	2,112.41	7,447.54	316.99	—	16
287.12	2,996.17	1,371.20	548.00	774.00	995.53	3,688.73	692.56	—	17
300.00	17,947.23	3,089.30	3,331.59	6,394.53	3,781.64	16,597.06	1,350.17	+	18
206.07	2,311.52	560.75	639.50	960.00	265.58	2,425.83	114.31	—	19
233.57	4,157.57	835.75	600.00	850.00	461.50	2,747.25	1,410.32	+	20
202.95	226.45	529.50	------------	----------	240.00	769.50	543.05	—	21
223.84	1,677.28	738.40	186.00	----------	1,242.34	2,166.74	489.46	—	22
228.65	4,215.12	786.50	965.00	1,534.25	908.31	4,194.06	21.06	+	23
213.74	3,480.99	637.40	760.00	1,625.00	800.00	3,822.40	341.41	—	24
300.00	6,926.64	1,655.50	2,010.00	1,150.00	3,543.00	8,358.50	1,431.86	—	25
205.66	2,242.56	556.60	525.00	234.00	1,035.76	2,351.36	108.80	—	26
228.54	4,378.34	785.45	1,550.00	683.33	1,124.68	4,143.46	234.88	+	27
196.14	2,750.12	490.35	1,075.00	1,375.00	444.50	3,384.85	634.73	—	28
239.26	1,197.16	892.60	750.00	----------	890.32	2,532.92	1,335.76	—	29
252.05	9,155.97	1,020.50	1,460.00	2,180.00	1,770.07	6,430.57	2,725.40	+	30
261.69	4,427.14	1,116.88	790.00	1,627.53	369.01	3,903.42	523.72	+	31
237.57	3,378.18	875.73	505.00	755.00	910.25	3,045.98	332.20	+	32
212.60	4,843.90	625.98	1,353.75	104.00	1,708.51	3,792.24	1,051.66	+	33
200.82	3,938.42	508.25	1,800.00	350.00	------------	2,658.25	1,280.17	+	34
277.65	5,039.15	1,276.55	2,280.00	1,247.00	1,629.16	6,432.71	1,393.56	—	35
212.30	3,128.10	623.00	82.75	784.13	825.50	2,315.38	812.72	+	36
300.0	10,332.95	2,300.00	2,900.00	550.00	1,997.92	7,747.92	2,585.03	+	37
225.87	3,682.41	758.75	1,545.00	414.48	547.28	3,265.51	416.90	+	38
249.88	6,824.88	998.80	2,075.00	2,800.00	601.08	6,474.88	350.00	+	39
175.02	3,269.27	437.55	1,014.25	721.60	604.96	2,778.36	490.91	+	40
106.72	2,167.22	266.80	1,000.00	275.00	778.00	2,319.80	152.58	—	41
175.32	1,215.43	438.30	260.00	175.00	121.10	994.40	221.03	+	42
259.12	5,581.47	1,091.25	1,720.50	755.00	1,142.46	4,709.21	872.26	+	43
291.40	6,364.15	1,414.04	1,696.25	1,000.00	1,711.45	5,821.74	532.41	+	44
165.80	6,927.40	414.50	2,700.00	710.00	1,066.68	4,891.18	2,036.22	+	45
234.54	1,494.36	845.40	570.00	75.00	1,241.11	2,731.51	1,237.15	—	46
218.07	8,677.38	680.75	1,920.60	2,952.25	1,822.20	7,375.80	1,301.58	+	47
201.42	5,702.22	514.20	1,185.00	1,859.90	1,609.52	5,168.62	533.60	+	48
225.65	4,013.22	756.50	1,350.00	580.00	12.31	2,698.81	1,315.04	+	49
275.37	6,972.27	1,253.75	1.700.00	932.70	1,853.62	5,740.07	1,232.20	+	50
160.78	3,263.78	401.95	1,285.00	305.00	770.05	2,762.00	501.78	+	51
300.00	4,575.47	1,501.75	1,010.00	228.04	1,203.63	3,943.42	632.05	+	52
247.60	4,568.90	976.00	------------	1,644.35	1,563.49	4,183.84	385.06	+	53
235.74	6,541.51	857.37	1,634.00	1,770.00	1,077.18	5,338.55	1,202.96	+	54
282.25	6,425.60	1,322.50	2,225.00	755.00	1,397.64	5,700.14	725.46	+	55
238.05	11,710.19	880.50	3,567.50	1,920.00	2,911.86	9,279.86	2,430.33	+	56
212 53	2,172.78	625.30	705.00	431.50	778.60	2,540.40	367.62	—	57
183.84	1,687.06	459.60	330.00	442.00	731.76	1,963.36	276.30	—	58
200.41	1.358.96	504.10	------------	460.00	324.20	1,288.30	70.66	+	59

TABLE NO. II

Number	County and City or Town	Receipts				
		Ticket Sales				
		Outside gates	Grand stand	Entry fees, speed department	Consignments and privileges	Miscellaneous receipts of fair
60	Marshall, Marshalltown	7,281.55	2,165.30	1,345.00	1,352.25	290.56
61	Mills, Malvern	3,221.06	----------	949.00	702.65	361.19
62	Mitchell, Osage	1,436.50	93.80	227.50	146.50	324.00
63	Monona, Onawa	1,408.80	446.60	42.00	380.50	685.85
64	Monroe, Albia	3,891.75	763.25	387.50	791.00	360.67
65	Muscatine, West Liberty	5,199.30	825.80	708.00	644.15	770.95
66	Muscatine, Wilton	1,854.19	358.75	320.00	276.50	325.09
67	O'Brien, Sheldon	3,796.35	389.25	1,490.00	578.00	755.31
68	O'Brien, Sutherland	1,374.75	159.25	5.00	186.20	121.00
69	Page, Clarinda	10,676.34	77.10	582.00	637.50	1,153.55
70	Page, Shenandoah	6,421.75	----------	913.30	796.50	1,611.14
71	Pocahontas, Fonda	2,668.00	409.70	1,922.50	1,200.00	528.00
72	Pottawattamie, Avoca	3,358.85	1,073.85	497.75	845.35	322.60
73	Poweshiek, Grinnell	1,685.80	272.00	158.75	149.30	455.86
74	Poweshiek, Malcom	1,221.55	425.25	398.95	271.00	300.47
75	Sac, Sac City	5,099.45	----------	981.75	2,351.60	135.00
76	Shelby, Harlan	3,141.60	816.00	974.75	785.00	509.40
77	Sioux, Orange City	2,194.33	133.25	222.85	195.80	202.50
78	Story, Ames	2,091.55	242.75	----------	232.95	429.15
79	Tama, Toledo	3,810.23	690.90	240.00	469.50	490.86
80	Taylor, Bedford	2,442.80	653.85	750.00	----------	386.06
81	Van Buren, Milton	1,496.25	217.65	136.00	165.00	189.55
82	Wapello, Eldon	3,145.75	157.90	300.00	605.40	386.85
83	Warren, Indianola	2,140.75	623.90	170.50	478.65	337.30
84	Wayne, Sewal	----------	36.17	130.00	355.86	24.75
85	Webster, Fort Dodge	1,670.40	365.20	878.75	368.06	77.90
86	Winnebago, Forest City	1,396.45	470.00	90.00	214.50	629.50
87	Winneshiek, Decorah	2,577.60	183.95	560.00	88.00	120.00
88	Woodbury, Sioux City	24,120.50	4,724.75	1,791.11	6,905.25	2,487.70
89	Worth, Northwood	1,490.40	110.15	----------	168.40	331.15
90	Wright, Clarion	3,350.50	296.25	1,320.00	476.00	290.00
		$287,228.94	$15,876.47	$41,262.11	$55,279.23	$53,463.78

—CONTINUED.

Receipts		Disbursements							
State aid	Total receipts of fair	Premiums other than for speed	Speed premiums	Music and attractions	Miscellaneous expense of fair	Total disbursements	Profit or loss	(+) (−)	Number
300.00	12,734.66	3,138.50	3,040.00	1,900.00	5,102.37	13,180.87	446.21	—	60
249.55	5,483.45	995.55	2,186.00	950.00	900.00	5,031.55	451.90	+	61
205.85	2,434.15	558.50	780.00	797.00	750.00	2,885.50	451.35	—	62
234.00	3,197.75	840.00	400.75	1,202.94	613.69	3,057.38	140.37	+	63
250.97	6,445.14	1,009.75	2,101.50	135.24	1,419.39	4,665.88	1,779.26	+	64
300.00	8,448.20	2,154.50	1,915.00	440.00	1,407.08	5,916.58	2,531.62	+	65
226.40	3,360.93	764.00	1,750.00	110.00	1,043.74	3,667.74	306.81	—	66
243.27	7,252.18	932.68	3,080.00	1,032.00	1,418.48	6,463.16	789.02	+	67
214.97	2,061.17	649.75	470.00	915.00	915.70	2,950.45	889.28	—	68
291.31	13,417.80	1,413.15	2,091.00	2,439.74	2,712.70	8,656.59	4,761.21	+	69
300.00	10,042.69	1,629.15	2,530.50	1,911.60	2,560.40	8,631.65	1,411.04	+	70
229.67	6,957.87	796.75	3,425.00	800.00	1,338.63	6,360.38	597.49	+	71
233.44	6,331.84	834.36	3,144.25	600.00	1,882.04	6,460.65	128.81	—	72
254.53	2,976.24	1,045.30	790.75	650.00	963.44	3,449.49	473.25	—	73
209.45	2,826.67	594.50	1,222.10	274.75	773.75	2,865.10	38.43	—	74
262.91	8,830.71	1,129.10	3,403.00	1,425.00	1,749.25	7,706.35	1,124.36	+	75
271.72	6,498.47	1,217.25	3,095.00	800.00	1,393.19	6,505.44	6.97	—	76
212.62	3,161.35	626.25	827.15	750.00	585.24	2,788.64	372.71	+	77
291.15	3,287.55	1,411.50	------------	882.21	1,509.81	3,803.52	515.97	—	78
300.00	6,001.49	1,677.35	1,265.00	770.00	867.00	4,580.29	1,421.20	+	79
117.46	4,350.17	293.65	1,976.25	816.25	787.77	3,873.92	476.25	+	80
200.70	2,405.15	507.00	1,075.00	87.50	679.65	2,349.15	56.00	+	81
216.58	4,812.48	665.85	1,923.75	1,025.00	1,048.68	4,663.28	149.20	+	82
300.00	4,051.10	1,613.25	1,545.00	75.00	1,218.62	4,451.87	400.77	—	83
123.10	669.88	307.75	410.50	----------	175.00	893.25	223.37	—	84
204.23	3,564.54	542.32	2,567.50	750.00	1,764.59	5,624.41	2,059.87	—	85
213.89	3,014.34	638.94	620.00	1,187.50	820.58	3,267.02	252.68	—	86
202.50	3.732.05	525.00	1,458.00	1,188.50	1,594.54	4,766.04	1,033.99	—	87
300.00	40,329.31	8,167.50	6,288.48	2,965.00	19,040.85	36,461.83	3,867.48	+	88
220.09	2,320.19	700.87	------------	646.50	631.83	1,979.20	340.99	+	89
253.25	5,986.00	1,032.50	3,525.00	482.00	915.20	5,954.70	31.30	+	90
$21,131.27	$504,241.80	$96,267.05	$136,452.46	$93,975.14	$139,564.89	$466,259.54	$59,998.18 $22,015.92	+ —	

TABLE NO. III—TOTAL NUMBER OF EXHIBITORS, NUMBER HORSES, CATTLE, SWINE, SHEEP AND POULTRY ON EACH

Number	County and City or Town	Number of exhibitors	Number of exhibitors live stock dept.	Horses		Cattle		Swine
				No. exhibited	Premiums paid	No. exhibited	Premiums paid	No. exhibited
1	Adair, Greenfield	167	39	50	$ 206.50	35	$ 125.00	160
2	Adams, Corning	------	------	------	102.10	------	118.00	------
3	Allamakee, Waukon	200	30	75	96.00	30	98.00	------
4	Audubon, Audubon	116	25	45	198.00	30	176.00	200
5	Benton, Vinton	95	42	60	336.00	12	39.00	18
6	Black Hawk, Waterloo	35	35	------	------	650	4,840.00	------
7	Black Hawk, Cedar Falls	735	68	56	331.50	122	476.00	240
8	Boone, Ogden	113	12	72	216.00	10	35.50	------
9	Bremer, Waverly	750	82	184	665.50	209	605.50	247
10	Buchanan, Independence	172	60	50	224.18	60	276.20	20
11	Buena Vista, Alta	122	27	9	39.50	20	96.00	107
12	Butler, Allison	200	20	15	102.00	8	67.00	70
13	Calhoun, Manson	202	46	101	197.00	31	159.00	89
14	Calhoun, Rockwell City	150	35	50	190.00	65	185.00	75
15	Carroll, Carroll	71	14	16	98.00	52	197.00	38
16	Cass, Atlantic	413	194	47	566.00	28	107.50	128
17	Cedar, Tipton	280	36	156	569.50	24	217.00	29
18	Cerro Gordo, Mason City	509	80	48	180.00	160	559.00	150
19	Chickasaw, New Hampton	150	20	16	72.50	39	80.00	61
20	Chickasaw, Nashua	146	88	119	180.50	100	207.00	30
21	Clay, Spencer	52	52	130	210.00	50	157.50	70
22	Clayton, National	60	21	63	143.00	22	53.00	11
23	Clayton, Strawberry Point	260	23	34	152.75	42	153 50	29
24	Clayton, Elkader	138	28	36	76.00	28	59.00	40
25	Clinton, De Witt	545	35	32	430.00	45	365 00	102
26	Crawford, Arion	118	36	37	118.75	26	65.00	50
27	Davis, Bloomfield	253	47	69	212 00	28	109.50	19
28	Delaware, Manchester	165	22	48	167.50	23	88.00	26
29	Dickinson, Spirit Lake	227	40	35	225.00	19	67.00	89
30	Fayette, West Union	352	83	127	363.50	41	75.00	138
31	Greene, Jefferson	457	------	147	460.38	48	113.90	71
32	Grundy, Grundy Center	240	30	45	70.30	103	295.45	65
33	Guthrie, Guthrie Center	------	------	81	141.45	12	62.90	83
34	Hancock, Britt	------	------	------	137.60	------	122.75	------
35	Hardin, Eldora	151	31	67	304.50	65	234.00	68
36	Harrison, Missouri Valley	216	------	44	176.00	22	70.00	14
37	Henry, Mt. Pleasant	420	76	107	591.00	128	594.00	285
38	Henry, Winfield	79	20	------	225.00	------	131.00	------
39	Humboldt, Humboldt	120	36	34	280.00	43	160.00	24
40	Iowa, Marengo	126	16	13	64.00	20	169.00	20
41	Iowa, Victor	80	12	8	29.00	9	51.00	15
42	Iowa, Williamsburg	130	15	16	56.00	6	36.50	6
43	Jackson, Maquoketa	224	78	135	289.00	85	258.10	68
44	Jasper, Newton	160	28	69	297.90	32	62.78	168
45	Jefferson, Fairfield	101	18	6	20.00	8	28.00	------
46	Johnson, Iowa City	112	22	40	274.75	18	231.00	30
47	Jones, Anamosa	300	22	58	166.00	36	87.20	------
48	Jones, Monticello	192	42	32	80.00	38	100.00	------
49	Keokuk, What Cheer	109	26	36	167.00	31	127.00	61
50	Kossuth, Algona	183	72	91	260.50	57	266.00	90
51	Lee, Donnellson	91	17	40	102.50	30	103.00	------
52	Lee, West Point	93	38	87	905.00	33	153.00	20
53	Linn, Central City	200	45	55	244.00	34	148.00	14
54	Linn, Marion	231	57	79	171.60	57	265.49	61
55	Louisa, Columbus Jct.	224	27	43	207.50	27	215.00	67
56	Lyon, Rock Rapids	294	47	16	124.00	58	243 00	56
57	Mahaska, Oskaloosa	219	35	28	133.00	11	54.00	30
58	Marion, Pella	229	37	64	182.00	2	8.00	6
59	Marshall, Rhodes	91	28	35	114.00	57	90.00	70
60	Marshall, Marshalltown	615	60	95	316.00	110	669.00	150

EXHIBITORS IN LIVE STOCK DEPARTMENTS, NUMBER EXHIBITION AND AMOUNT OF PREMIUMS PAID IN DIVISION.

Swine	Sheep		Poultry		Premiums paid agricultural department	Premiums paid pantry and kitchen departments	Premiums paid fine arts department	Premiums paid all other departments	Number
Premiums paid	Number exhibited	Premiums paid	Number exhibited	Premiums paid					
$ 137.50	39	$ 45.50	100	$ 39.25	$ 59.50	$ 40.70	$ 61.00	$ 29.25	1
51.00	--------	65.44	-------	38.22	85.55	67.72	33.40	31.71	2
----------	18	10.00	100	10.00	66.00	27.00	54.50	100.00	3
142.75	--------	----------	50	18.50	161.50	68.00	85.00	93.00	4
36.00	--------	----------	46	49.00	13.50	9.75	52.50	----------	5
----------	--------	----------	-------	----------	----------	----------	----------	----------	6
141.00	112	253.90	230	82.25	125.50	55.55	324.40	10.00	7
----------	9	26.00	35	14.25	22.00	22.35	101.65	----------	8
165.00	30	66.00	475	103.25	160.05	54.45	95.25	630.30	9
48.70	10	35.00	-------	----------	16.65	29.04	9.23	195.75	10
153.00	13	17.75	39	24.50	57.50	60.75	43.50	393.00	11
116.50	2	1.00	100	89.50	78.55	26.00	10.25	253.00	12
142.50	6	7.00	143	59.75	80.25	86.00	49.50	220.00	13
51.00	20	41.00	300	43.50	35.00	30.50	115.75	30.50	14
121.50	--------	----------	18	1.50	21.00	74.75	4.00	----------	15
163.10	36	169.60	34	89.50	118.25	135.85	198.95	21.39	16
60.50	60	142.00	73	21.50	41.75	74.55	117.30	127.10	17
317.00	100	159.00	298	128.75	420.35	79.05	184.15	1,061.10	18
85.00	22	41.00	98	26.00	71.25	91.00	33.75	60.25	19
47.00	120	14.50	300	53.75	82.25	35.50	120.75	94.50	20
85.00	30	52.00	6	----------	----------	----------	----------	25.00	21
21.00	16	25.00	82	48.50	90.20	77.55	242.90	37.25	22
99.50	5	19.00	88	47.50	57.50	80.25	135.50	41.00	23
123.00	--------	95.00	-------	----------	99.65	38.00	142.75	4.00	24
157.00	13	38.00	60	40.00	163.00	105.00	253.00	104.50	25
53.00	20	45.50	30	8.00	87.75	28.35	38.50	111.75	26
38.50	39	52.00	141	80.55	66.75	36.00	95.50	94.65	27
59.00	12	12.00	64	20.50	12.25	----------	----------	131.10	28
94.50	12	33.00	30	32.00	308.75	36.40	24.95	71.00	29
202.00	4	5.50	84	52.75	128.00	18.25	109.00	66.50	30
159.16	11	37.88	73	81.50	72.00	----------	140.31	42.75	31
94.05	22	26.60	344	97.91	26.58	----------	47.70	112.27	32
175.37	13	11.10	75	27.68	33.30	86.98	87.20	----------	33
43.90	--------	12.00	-------	27.35	47.85	25.00	56.80	35.00	34
126.00	52	125.00	191	106.35	81.95	52.65	157.70	88.40	35
25.00	--------	----------	41	19.50	150.25	93.25	60.00	29.00	36
282.00	90	245.00	228	137.00	74.00	68.50	179.25	129.25	37
68.00	--------	45.00	-------	10.00	27.00	80.00	130.75	42.00	38
65.00	18	40.00	75	50.00	125.00	65.00	110.00	103.80	39
42.00	13	13.00	79	23.65	20.25	12.50	5.00	88.15	40
21.00	--------	----------	20	10.50	45.70	23.60	47.00	39.00	41
14.00	--------	----------	135	73.00	60.70	28.45	48.20	121.45	42
105.00	46	50.50	182	53.50	90.15	65.60	179.40	----------	43
223.20	16	27.45	219	59.63	74.03	100.58	181.35	387.12	44
----------	14	33.50	35	19.25	69.50	70.25	131.25	42.75	45
113.00	10	14.00	52	27.00	54.00	44.35	86.30	1.00	46
----------	11	14.60	21	3.75	74.80	----------	236.60	97.80	47
----------	--------	----------	75	22.75	33.75	100.65	65.35	111.70	48
165.00	23	22.00	79	23.00	55.00	53.00	85.00	59.50	49
141.00	19	50.50	174	31.50	108.25	81.25	148.00	226.75	50
----------	7	22.00	46	15.50	53.90	42.05	63.00	----------	51
51.00	17	30.00	321	123.00	56.00	38.75	117.00	28.00	52
44.00	30	55.00	215	57.75	123.00	77.00	127.75	99.50	53
97.40	26	31.00	153	36.30	87.10	45.05	78.43	45.00	54
279.00	3	12.50	75	108.00	117.25	63.50	108.00	211.75	55
92.50	6	6.00	38	26.50	68.75	58.25	43.00	218.50	56
49.00	23	36.00	46	21.50	54.60	81.25	195.95	----------	57
1.50	12	7.50	218	43.00	56.65	35.70	95.00	30.25	58
75.00	29	22.00	75	23.00	46.60	43.50	17.25	72.75	59
395.00	60	203.00	1,054	272.10	280.20	91.00	299.00	613.20	60

TABLE NO. III

Number	County and City and Town	Number of exhibitors	Number of exhibitors live stock dept.	Horses		Cattle		Swine
				No. exhibited	Premiums paid	No. exhibited	Premiums paid	No. exhibited
61	Mills, Malvern	78	31	73	315.00	57	311.00	------
62	Mitchell, Osage	42	11	24	104.00	19	93.00	19
63	Monona, Onawa	150	26	50	138.00	35	213.25	41
64	Monroe, Albia	138	47	111	477.10	19	100.30	42
65	Muscatine, West Liberty	400	80	150	637.00	90	397.00	90
66	Muscatine, Wilton	181	75	54	205.00	40	108.00	51
67	O'Brien, Sheldon	276	38	45	184.50	74	209.50	75
68	O'Brien, Sutherland	86	51	48	170.50	31	133.50	36
69	Page, Clarinda	271	38	122	458.00	36	148.00	56
70	Page, Shenandoah	190	35	80	674.00	55	339.00	40
71	Pocahontas, Fonda	200	23	62	190.00	50	225.00	15
72	Pottawattamie, Avoca	-------	------	------	143.00	------	214.50	------
73	Poweshiek, Grinnell	148	22	37	210.50	34	274.00	54
74	Poweshiek, Malcom	105	34	35	149.00	12	92.00	27
75	Sac, Sac City	216	68	95	325.00	25	150.00	44
76	Shelby, Harlan	-------	------	------	436.00	------	267.00	------
77	Sioux, Orange City	119	25	35	205.00	50	153.00	48
78	Story, Ames	217	79	125	438.00	60	238.00	100
79	Tama, Toledo	250	85	125	244.00	175	599.00	340
80	Taylor, Bedford	49	12	5	17.00	40	86.60	28
81	Van Buren, Milton	67	12	33	88.50	19	64.00	37
82	Wapello, Eldon	144	38	62	174.00	31	130.00	54
83	Warren, Indianola	95	26	98	292.00	42	207.00	55
84	Wayne, Sewal	84	28	27	180.00	1	28.00	------
85	Webster, Fort Dodge	17	9	27	163.00	32	279.32	------
86	Winnebago, Forest City	78	46	22	44.78	68	185.63	43
87	Winneshiek, Decorah	111	46	32	73.00	53	93.75	114
88	Woodbury, Sioux City	548	130	178	1,233.00	397	2,709.00	1,856
89	Worth, Northwood	174	32	59	173.74	60	103.11	43
90	Wright, Clarion	-------	------	84	237.50	65	276.00	73
	--	16,717	3.432	5,223	$21,639.38	4,859	$23,372.73	7.759

—CONTINUED.

Swine	Sheep		Poultry						
Premiums paid	Number exhibited	Premiums paid	Number exhibited	Premiums paid	Premiums paid agricultural department	Premiums paid pantry and kitchen departments	Premiums paid fine arts department	Premiums paid all other departments	Number
----------	--------	----------	71	26.50	89.25	80.25	45.50	128.05	61
39.00	16	61.00	54	19.00	29.50	21.00	17.00	175.00	62
79.00	17	23.00	55	24.00	131.75	53.00	178.00	----------	63
128.90	22	68.70	46	35.90	69.75	44.65	83.45	1.00	64
194.00	60	102.00	200	92.75	134.50	118.00	228.75	250.50	65
26.00	11	59.00	297	90.50	59.50	122.50	25.25	68.25	66
122.00	17	36.00	173	78.00	58.75	53.25	164.18	26.50	67
64.05	32	24.00	85	35.00	22.75	9.35	51.15	139.45	68
130.40	132	228.00	167	25.40	99.00	65.25	70.75	188.35	69
140.50	10	25.00	300	62.00	61.50	65.25	146.90	115.00	70
50.00	10	15.00	210	70.00	56.25	47.50	68.00	75.00	71
114.00	--------	65.00	--------	70.61	60.50	----------	156.75	10.00	72
143.00	12	----------	62	56.00	57.45	32.60	84.50	187.25	73
54.00	--------	----------	26	9.75	90.75	36.75	132.50	29.75	74
97.00	25	48.00	148	103.00	42.35	79.10	12.00	272.65	75
249.00	--------	----------	--------	56.75	76.50	55.00	77.00	----------	76
86.00	11	19.00	60	22.75	38.50	10.75	69.25	22.00	77
158.25	65	132.00	280	48.50	173.25	107.00	90.50	26.00	78
192.00	60	90.50	200	80.00	101.25	98.50	213.00	59.10	79
38.00	--------	----------	57	31.00	34.75	28.80	35.00	22.50	80
73.75	26	40.50	87	68.60	86.75	38.90	33.50	12.50	81
114.00	36	80.00	84	29.75	38.75	30.75	49.60	19.00	82
108.00	37	97.00	325	152.00	182.50	92.00	326.25	156.50	83
----------	1	2.50	1	1.00	25.25	20.75	50.25	----------	84
----------	--------	----------	--------	----------	----------	----------	----------	100.00	85
93.38	3	9.00	34	31.28	82.35	31.73	62.46	98.33	86
142.00	38	33.50	287	34.50	71.25	21.50	48.00	7.50	87
1,253.00	350	507.00	175	79.50	1,397.00	302.10	460.00	240.00	88
90.00	41	41.11	111	17.25	113.25	90.25	53.66	18.50	89
134.25	19	23.00	--------	13.00	48.75	61.50	153.50	85.00	90
$9,972.11	2,370	$4,494.63	10,958	$4,318.53	$8,535.01	$4,934.35	$9,261.12	$9,647.93	

TABLE NO IV—TOTAL ATTENDANCE, TOTAL PAID ADMISSIONS AND ADMISSION FEES CHARGED AT COUNTY AND DISTRICT FAIRS IN IOWA FOR 1914.

Number	County and City or Town	Total attendance	Total paid admissions	Outside Gate Admissions			Grand stand	Quarter Stretch	
				Adults	Vehicles	Children		Vehicles	Persons
1	Adair, Greenfield	5,500	5,176	35	----	25	15	25	15
2	Adams, Corning	----------	----------	35	25	20	15	25	15
3	Allamakee, Waukon	9,000	8,000	50	25	25	25	----	----
4	Audubon, Audubon	16,500	8,081	35	25	15	25	----	----
5	Benton, Vinton	*	----------	35	25	25	15	25	----
6	Black Hawk, Waterloo	15,000	12,762	50	50	25	----	----	----
7	Black Hawk, Cedar Falls	27,377	21,888	35	25	25	25	----	----
8	Boone, Ogden	4,000	2,593	35	----	----	10	----	10
9	Bremer, Waverly	34,961	23,360	35	25	----	25	----	----
10	Buchanan, Independence	16,500	14,377	35	25	15	25	----	15
11	Buena Vista, Alta	10,562	10,076	50	25	25	25	----	----
12	Butler, Allison	10.000	8,000	35	35	25	15	----	----
13	Calhoun, Manson	4,275	4,059	50	----	25	25	----	25
14	Calhoun, Rockwell City	10,000	6,000	50	25	----	25	----	25
15	Carroll, Carroll	6,650	4,044	35	35	----	25	----	25
16	Cass, Atlantic	34,000	18,000	35	35	15	25	25	25
17	Cedar, Tipton	8,500	5.443	35	35	15	15	----	10
18	Cerro Gordo, Mason City	44,129	24,129	35	----	----	25	†	25
19	Chickasaw, New Hampton	6,010	5,000	50	25	25	10	----	----
20	Chickasaw, Nashua	11,000	4,750	35	25	25	15	----	----
21	Clay, Spencer	8,000	**	----	----	----	----	----	----
22	Clayton, National	3,500	3,000	35	50	25	15	----	----
23	Clayton, Strawberry Point	12,000	10,500	35	35	20	15	----	15
24	Clayton, Elkader	6,500	4,839	50	50	25	15	----	----
26	Clinton, De Witt	12,000	9,000	35	35	15	25	25	25
26	Crawford, Arion	4,500	4,033	35	35	15	25	25	----
27	Davis, Bloomfield	12,000	----------	25	10	15	10	----	25
28	Delaware, Manchester	----------	----------	35	25	15	15	----	----
29	Dickinson, Spirit Lake	1,320	930	35	25	25	25	----	----
30	Fayette, West Union	22,000	14,130	35	50	10	25	----	----
31	Greene, Jefferson	14,747	9,852	35	35	----	25	25	25
32	Grundy, Grundy Center	9,851	8,501	35	35	20	15	----	----
33	Guthrie, Guthrie Center	11,000	----------	35	35	25	25	----	----
34	Hancock, Britt	10,000	----------	50	35	25	15	----	----
35	Hardin, Eldora	8,438	8,438	35	35	15	15	----	----
36	Harrison, Missouri Valley	7,000	----------	35	35	----	15	25	25
37	Henry, Mt. Pleasant	28,000	23,000	35	25	10	15	25	10
38	Henry, Winfield	----------	----------	35	25	15	15	25	15
39	Humboldt, Humboldt	15,000	11,200	50	----	25	25	----	15
40	Iowa, Marengo	5,290	4,291	35	25	15	25	----	25
41	Iowa, Victor	5,000	4,073	35	35	15	25	25	25
42	Iowa, Williamsburg	2,500	2,000	25	25	15	25	----	25
43	Jackson, Maquoketa	13,000	7,261	35	60	15	25	----	25
44	Jasper, Newton	12,761	10,761	35	35	35	25	25	25
45	Jefferson, Fairfield	15,000	11,790	35	35	----	10	----	----
46	Johnson, Iowa City	620	525	35	35	25	25	15	15
47	Jones, Anamosa	30,000	20,000	35	25	15	15	----	15
48	Jones, Monticello	10,000	8,927	35	25	15	15	----	15
49	Keokuk, What Cheer	11,000	9.000	35	25	25	25	25	25
50	Kossuth, Algona	15,000	10,640	35	25	----	25	----	15
51	Lee, Donnellson	5,895	5,895	35	25	15	----	----	----
52	Lee, West Point	5,452	5,452	35	35	----	----	----	10
53	Linn, Central City	10,000	9,500	35	25	15	15	----	----
54	Linn, Marion	17,000	16,784	35	25	15	15	----	----
55	Louisa, Columbus Junction	15,000	10.770	35	25	25	15	15	15
56	Lyon, Rock Rapids	17,553	17,553	35	25	25	25	----	15
57	Mahaska, New Sharon	3,500	3,007	35	25	20	25	----	25
58	Marion, Pella	3,179	3,179	25	25	15	15	15	15
59	Marshall, Rhodes	5,000	3,700	25	25	15	----	----	----
60	Marshall, Marshalltown	36,712	25,000	35	25	15	25	25	25
61	Mills, Malvern	----------	----------	35	35	15	25	----	----
62	Mitchell, Osage	2,200	2,099	50	25	25	15	----	----

TABLE No. IV—CONTINUED.

Number	County and City or Town	Total attendance	Total paid admissions	Outside Gate Admissions			Grand stand	Quarter stretch	
				Adults	Vehicles	Children		Vehicles	Persons
63	Monona, Onawa	4,718	4,118	35	----	25	25	----	25
64	Monroe, Albia	13,000	10,363	35	15	15	15	25	15
65	Muscatine, West Liberty	15,000	12,000	35	35	----	20	20	20
66	Muscatine, Wilton	6,000	5,200	35	35	20	15	15	15
67	O'Brien, Sheldon	13,000	12,045	50	----	25	25	----	----
68	O'Brien, Sutherland	3,250	2,350	35	35	25	25	----	15
69	Page, Clarinda	25,000	16,000	50	25	25	10	25	25
70	Page, Shenandoah	32,500	26,500	35	25	15	25	25	25
71	Pocahontas, Fonda	7,000	6,000	50	25	25	25	----	25
72	Pottawattamie, Avoca	----------	----------	35	35	15	25	25	25
73	Poweshiek, Grinnell	6,000	4,185	35	35	----	25	----	25
74	Poweshiek, Malcom	7,000	5,773	35	25	25	25	----	25
75	Sac, Sac City	12,600	10,098	50	25	25	25	----	25
76	Shelby, Harlan	----------	----------	----	----	----	----	----	----
77	Sioux, Orange City	7,200	4,388	50	50	25	25	----	25
78	Story, Ames	10,000	6,500	35	----	25	----	----	----
79	Tama, Toledo	14,000	13,000	35	25	15	15	25	25
80	Taylor, Bedford	7,000	6,122	35	25	15	20	10	25
81	Van Buren, Milton	6,000	5,600	25	25	15	10	10	10
82	Wapello, Eldon	7,000	6,912	50	50	15	10	----	25
83	Warren, Indianola	9,250	8,000	25	25	15	25	----	25
84	Wayne, Sewal	12,000	**	----	----	----	15	25	10
85	Webster, Fort Dodge	5,000	3,540	50	----	25	25	----	----
86	Winnebago, Forest City	5,275	5,260	35	25	----	25	----	----
87	Winneshiek, Decorah	6,100	5,858	50	----	15	15	----	----
88	Woodbury, Sioux City	55,796	49,673	50	----	25	25	----	25
89	Worth, Northwood	4,600	4,073	35	25	----	15	----	----
90	Wright, Clarion	8,000	7,070	50	25	25	25	----	----
	Total attendance	1,003,271	725,896	----	----	----	----	----	----

*Fair declared off on account of rain.
†None admitted.
**No outside gate admission.

Admission Fees Paid	50 cents	35 cents	25 cents	20 cents	15 cents	10 cents	No chg.
General admission outside gates:							
Adults	20	61	6	------	------	------	3
Vehicles	7	24	43	------	1	1	14
Children	------	1	33	5	32	2	17
Grand stand admissions	------	------	45	2	29	7	7
Quarter stretch admissions:							
Persons	------	------	31	1	16	6	36
Vehicles	------	------	20	1	4	2	63

IOWA STATE FAIR AND EXPOSITION.

The Iowa State Fair and Exposition, which was held in Des Moines, August 26th-September 4th, inclusive, set new high water marks and was more successful in many respects than any of the preceding fairs. We can truthfully say, without fear of successful contradiction, that it was the greatest live stock show that has been held, or will be held, in America this year. It was complete in all its various departments; educational features were in the foreground. The music and amusement features were the best that the management could secure.

The agreement the management has had with the weather man for the past four or five years evidently expired last year and was not renewed. While the records of the weather office do not indicate there was an excessive amount of rainfall during the period of the 1914 fair, nevertheless, with the exception of one or two days, the weather and atmospheric conditions were not what you would call good, fair weather. We had two general rains throughout the state; it was cloudy and threatened rain a great deal of the time. The days, and especially the nights, were quite chilly, so much so that it was uncomfortable for the people in the grandstand during the night performances. This, however, did not affect the exhibits, but did reduce the attendance quite materially.

The management had anticipated a large attendance from the rural districts and from cities and towns throughout the state by means of automobiles. This, however, was made impossible on account of the weather conditions and the condition of the roads during a greater portion of the time. A general rain throughout the state on Thursday night of the first week of the fair cut the automobile attendance on Friday and Saturday, and the threatening weather on Monday and the rain and wind storm on Monday night greatly reduced the attendance on Monday, Tuesday and Wednesday. I find on Monday and Tuesday this year an average of 1,800 automobiles passed through outside gates both days, while on the same days a year ago approximately 3,000 passed through the gates on each of these days. The windstorm on Monday night, which assumed the proportions of a hurricane, demolished all temporary structures, such as refreshment stands, tents, etc. It did not, however, damage to any extent the permanent buildings, or the exhibits housed therein. Newspaper reports went out over the state the next morning to the effect that the grounds were a complete wreck and that a number of the people were killed on the grounds. This also had a tendency to reduce the attendance on Tuesday, and possibly Wednesday, or until the newspapers had time to correct these erroneous reports.

The total attendance of the 1914 fair was 273,073, and in 1913 the total attendance was 280,462, thus showing a decrease of 7,489 in the total attendance during the entire period of the fair. The heavy falling off in attendance came on Monday and Tuesday. Monday fell off 16,816; Tuesday, 26,853. The falling off in attendance on these two days, however, was partially overcome on Wednesday and Thursday by an increased attendance on these days over a year ago and by the attendance on Friday, which was an added day this year devoted to auto races.

The following is the attendance of the 1914 fair, by days, compared with 1911, 1912 and 1913 fairs:

	1914	1913	1912	1911
Wednesday	4,537	3,849	----------	----------
Thursday	9,886	8.608	3,090	4,074
*Friday	27,613	33,020	7,503	6,063
†Saturday	27,999	26,861	27,957	27,514
Sunday	22,200	25,211	18,902	17,612
Monday	41,229	58,045	40.602	37,309
Tuesday	39,612	66,465	60,379	64,699
Wednesday	46,496	40,972	58,643	60,580
Thursday	31,523	17,431	38,831	34,117
Friday	21,978	----------	16,116	18,173
Total	273,073	280,462	272,023	270,682

*Children's Day, 1913-14.
†Children's Day, 1911-12.

In addition to a review of the exhibits this year, I wish to quote at this time from a number of our leading agricultural papers. The opinions of these editorial writers were gained by a personal visit to the Iowa State Fair this year. I believe what they have to say will give us a better idea of the Iowa State Fair than anything I could say, or, at least, they will give us a better conception of the high esteem the agricultural press has for the Iowa State Fair.

The Breeders' Gazette has this to say of the Iowa State Fair this year:

"The sixtieth anniversary of the Iowa State Fair added stature and fame. In its three score years it has acquired foundation on which the present imposing superstructure is built. Commanding in its strategic position at the opening of the Western circuit, this fair exerts every possible effort to measure up to the expectations which the agricultural world each year builds a little bigger. It has no climax in sight. It merely moves an appreciable peg forward each year, the admiration and wonder of the world. Its stride this year was mighty. Its promoters and patrons have every reason to rest in content and gratification over the spectacle which their united efforts added to farm history in America.

"The fair is in process of rebuilding. It is a long and costly process. Modern demands would have driven old time fair managers to despair. With all its hundreds of thousands in improvements, the Iowa State Fair presents a Queen Ann front and a Mary Ann back. Along the street in the stock departments stand spacious brick structures; in the rear, sheltering valuable cattle and sheep, are sheds that scarcely meet the requirements of a county fair grounds. About 300 head of horses and cattle were sheltered in tents. This disagreeable fact is not a reproach to the managers of this fair. They appreciate the situation quite as much as do the exhibitors and visitors."

The Iowa Homestead, Des Moines, Iowa, features the Iowa State Fair as follows:

"The Iowa State Fair is an institution of which any state might justly be proud. Leading in the production of corn, oats, hay and hogs, it is only right and proper that Iowa should also lead in the annual exposition which calls the attention of the world to the agricultural resources of the fertile heart of America. It is given to Iowa to open the grain-belt series of state fairs. No other state holds an exposition which can equal the Iowa one in the quality and quantity of live stock and farm products displayed.

"The 1914 Iowa State Fair, held in Des Moines this year, will go down in history as the biggest and best, from an exhibit standpoint, in the long, honorable list. For sixty years Iowa has been inviting the world to its doors, bidding it to come, enjoy itself and be instructed. The world did not respond in as large numbers this year as last, but the fair was worthy of a bigger attendance than has ever yet been accorded to it.

"Considering the fact that there was one-fifth more horses and cattle shown this year than ever before, it becomes apparent that the 1914 Iowa State Fair breaks all records and is entitled to the grand champion sweepstakes. Never before was there such an exhibit of live stock as was to be seen in Des Moines this year, testifying to the high plane which the live stock industry has reached in this state. With the foreign supply cut down almost to the vanishing point, by the seizure of pure bred mares and stallions for army service, the door of opportunity for Iowa and the grain belt breeders is opened as never before. Even a casual glimpse in any of the stables in Des Moines this year would convince the most doubtful that here is one state, at least, which has the stock and the breeders for the crisis. Many of the horsemen declared it will be twenty years before Belgium can export any pure bred horses. France will cut down its exports for at least half that time. In the meantime, it will be to America that the horse industry of the world must look."

The following from Wallaces' Farmer, Des Moines, Iowa:

"The fair season is on, and, if the future can be predicted from the opening at Des Moines, it will be even more successful than usual. Never before has the Iowa fair offered so much and such a variety of entertainment and instruction. The regular fair exhibits were superior, both in quality and arrangement and convenience of access. Courses of lectures on all sorts of topics of interest to farm folk are given each day in the different buildings, and the amusement features, some excellent, and some not so good, are sufficient to provide entertainment and relaxation.

"Being the first of the larger fairs, Iowa has always been fortunate in her live stock exhibit. All of the Western show herds meet here for a preliminary tryout and then separate, some going to Nebraska and some to Minnesota, to come together again later in the season.

"The stock show this year has probably never been surpassed, and, as stated by our live stock expert, was of distinctly international character. Both the cattle and horse shows were wonderful exhibitions of the art and skill of the breeder and feeder. Barn accommodations were quickly found to be inadequate, and it was necessary to house many of the valuable animals in large tents erected for the purpose. A very gratifying feature of the live stock exhibit is the large number of Iowa breeders who are showing herds fully able to compete with the best that have been brought in from other states. There can be no better evidence of the healthfulness of the live stock industry than is afforded by the show this year."

Twentieth Century Farmer, Omaha, Nebraska:

"The Iowa State Fair has again scored a record-breaking exhibition and display of all that contributes toward making a great agricultural and live stock show. Iowa is distinctly at the top in state fair and live stock exhibitions. Its resources within itself are a factor that cannot be easily overcome by any division of the United States. Iowa is great in its herds of pure bred horses, cattle and hogs. It is not only great in numbers, but has immense capital employed in the operation of producing the best that human ingenuity, skill and breeding intelligence can suggest.

"The Iowa State Fair has become a national exhibition where large numbers of high class show animals of America congregate. Owners of the champions and grand champions of the live stock shows of the country believe that nowhere can they be afforded greater honors than in occupying a place in the show ring of the Iowa State Fair.

"It is not in any spirit of placing one of our great live stock shows above another that we say that noted expert authorities of live stock and live stock shows have gone on record as pronouncing this the greatest live stock show in horses and cattle that has ever been held in the United States. When this has been established, the way is clear to make it world-wide, since the international at Chicago has been freely pronounced by the best of expert judges of Europe to surpass any held in that far-famed land of pure breds.

"This was not a two-breed exhibition of live stock. All breeds of every kind of stock, horses, cattle, hogs and sheep, were fully represented, and the very closest competition prevailed throughout the classifications in each show.

"Iowa is fortunate in having the natural layout in ground suitable for every feature of exhibition. It has been taken up by competent engineering talent and planned into a most beautiful and fitting design for all departments. The classification, or division, of all exhibits has made it an easy matter for the fair visitor to find anything he desires to see with the shortest possible expense of time. It is a fair grounds planned and builded upon a business basis, yet with natural fitness that charms the visitor with its beauty.

"The agricultural and horticultural divisions at the state fair are strong features. They are not planned solely for show and magnitude of exhibit, but based upon the educational advantage that these exhibits may contribute to the visitor who is seeking information."

As the reports of these agricultural papers would indicate, the exhibit at the 1914 Iowa State Fair was the greatest in the history of the fair. The exhibit at the 1914 Iowa State Fair was made by 1,772 individual exhibitors. They made 17,437 entries, exclusive of the machinery department. This is an increase of 174 exhibitors over last year and about 1,000 additional entries.

The following table gives a good idea of the diversity of the exhibits and also gives the number of exhibitors and the number of entries in each department of the fair, compared with the 1913 fair:

Department	1914 Fair		1913 Fair	
	No. of Exhibitors	No. of Entries	No. of Exhibitors	No. of Entries
Horses	142	2,413	148	2,028
Cattle	103	1,670	74	1,330
Swine	159	2,491	117	1,590
Sheep	30	771	24	647
Poultry	104	1,612	117	1,636
Agriculture	175	1,606	158	1,612
Pantry	169	2,130	144	2,206
Dairy	78	78	89	89
Horticulture	39	1,106	49	976
Floriculture	14	293	18	277
Textile, China, etc.	297	1,843	220	2,779
Graphic and Plastic Arts	31	224	----------	----------
School exhibits	104	1,200	99	----------
Farm implements	327	----------	341	----------
Totals	1,772	17,437	1,598	16,170

The exhibit in the horse department was made by 142 exhibitors, who entered 1,152 head of horses, ponies and mules. A commendable feature of the horse exhibit, and one that is growing each year, is the number of horses owned and exhibited by Iowa breeders. Of the 142 exhibitors in the horse department this year, 106 were Iowa breeders, 23 Illinois, 9 from Missouri, and 1 each from the states of Wisconsin, South Dakota, Nebraska and Kansas.

The National Draft Horse Breeders' Futurity for yearling stallion and filly foals, which has been contested at the Iowa State Fair for the past four years, was again a feature of the draft horse division of the show and brought out some excellent specimens of the four breeds. The Iowa exhibitors clearly demonstrated their ability as breeders in the futurity divisions, by winning four out of the eight first prizes.

A feature of the horse show classes was the One Thousand Dollar Saddle Horse Stake, which attracted fourteen entries. Twelve of these horses, including the very best specimens from the leading stables of Missouri—the home of the saddle horse—competed for the prizes.

Another educational feature that was added to the horse department this year was the horseshoeing contest. This was conducted in a tent near the horse barn, and, while the list of contestants was not large, it proved to be a very interesting contest and one that merits consideration.

The Horse Shoers' Journal, in commenting upon the contest, stated: "It was the first of its kind ever held in the United States, but from the interest aroused they were of the opinion that one would be held in connection with all of the larger fairs, and should be held at every small fair, in the future."

Another feature added this year was the steeple-chase races and jumping contests, which took place in the center field of the race track in front of the grandstand every afternoon.

The entries in the steeple-chase races were not large, but the contest proved to be exciting and popular with the audience. The plan of showing a number of classes of light harness horses and saddle horses in the show ring across from the grandstand each afternoon, which was made possible by the construction of the subway under the race track, worked out to be a popular feature with the grandstand crowds. This not only afforder a better place for exhibitors to show their horses, but also afforded an opportunity for a greater number of people to witness these contests. On the whole, the horse show was well balanced, and every ring was keenly contested.

The following tabulation gives the number of horse exhibits and the number of horses entered in each division as compared with 1913:

Breed	1914 Fair		1913 Fair	
	No. of Exhibitors	No. of Horses Entered	No. of Exhibitors	No. of Horses Entered
Percheron	43	246	43	198
Clydesdale	16	115	11	64
Shire	15	92	17	112
Belgian	24	175	20	139
Suffolk Punch	1	21	------	------
Draft gelgings and mares	25	72	14	40
Standard bred and show horses	20	95	26	104
Saddle Horses	24	96	26	80
Hunters and Jumpers	9	22	------	------
Morgan	5	25	10	37
Hackney	8	25	7	11
Shetland ponies	17	148	17	116
Welsh ponies	8	32	4	25
Ponies other than Shetland	10	40	11	19
Mules	3	20	9	48
Totals	142	1,152	148	993

The cattle exhibit at the 1914 fair was made by 103 exhibitors, who showed 1,186 head of cattle. This is an increase of 25 exhibitors and 229 head of cattle entered over last year. The exhibitors represented ten different states, Iowa ranking first, with 55 exhibitors, Wisconsin 14, Missouri 8, Illinois 7, Nebraska 7, Kansas 5, Minnesota 4, and Mississippi, Indiana and South Dakota each contributing 1 herd. There were 768 head entered in the beef breeds, as against 591 in 1913; 418 in the dairy breeds, as against 366 in 1913.

The new cattle barn erected this year, with accommodations for 108 head of cattle, relieved the congestion in the cattle barns to a certain extent, but, at that, it was necessary to use the three old sheep sheds which were converted into cattle barns a few years ago, and it was also necessary to stall twenty or thirty head in temporary stalls covered with a tent.

The following tabulation gives the number of cattle exhibitors and the number of cattle entered in each division, as compared with 1913:

Breed	1914 Fair		1913 Fair	
	No. of Exhibitors	No. of Cattle Entered	No. of Exhibitors	No. of Cattle Entered
Short Horns	30	258	19	160
Herefords	17	220	12	168
Aberdeen Angus	13	120	14	126
Galloway	3	43	4	57
Polled Durham	8	48	3	29
Red Polled	5	79	3	51
Holstein Friesian	7	106	8	104
Jersey	8	91	5	79
Guernsey	7	126	5	94
Ayrshire	2	38	2	35
Brown Swiss	3	57	2	42
Dutch Belted			1	12
Totals	103	1,186	74	957

The swine exhibit this year was a marked improvement over last year's show, both in quality and in the number of swine on exhibition. The show was made by 159 exhibitors, who entered 2,491 head of swine, as compared with 117 exhibitors and 1,590 head entered in 1913. Competent judges pronounced it the best show, from the standpoint of quality, that they had seen at the Iowa State Fair for a number of years. The rule of the Animal Health Commission, which provides for the immunizing of all swine before being placed on exhibition at state or county and district fairs, met with less opposition than a year ago. However, it is still evident that the rule keeps away a number of exhibitors who have not been convinced that the serum treatment is a safe treatment and preventive for hog cholera.

The following tabulation gives the number of swine exhibitors and the number of swine entered in each division, as compared with 1913:

Breed	1913 Fair		1914 Fair	
	No. of Exhibitors	No. of Swine Entered	No. of Exhibitors	No. of Swine Entered
Duroc Jersey	53	758	40	483
Poland China	42	680	34	384
Chester White	38	572	24	376
Hampshire	14	238	11	208
Berkshire	6	120	5	51
Yorkshire	3	48	4	72
Tamworth	2	55	1	16
Mule Foot	1			
Totals	159	2,491	117	1,590

The sheep exhibit this year was made by thirty exhibitors, showing about 700 head of sheep, which is a slight increase over the number shown last year.

The management finds it difficult to increase the sheep exhibit, or even hold its present exhibitors, with the accommodations they have to offer them. The old sheds assigned the sheep exhibitors again this year did not prove to be much shelter during the storms on Thursday and Monday nights. This caused considerable feeling among the sheep exhibitors; in fact, every sheep exhibitor at the 1914 fair signed a petition that they would not show their sheep at the Iowa State Fair unless better accommodations were provided for their exhibit before another year.

The sheep industry in the State of Iowa is of such importance that we are in hopes that the coming session of the legislature will give the matter serious consideration and make an appropriation to provide adequate quarters for the sheep exhibit at the Iowa State Fair before another fair takes place.

The poultry exhibit was made by 104 exhibitors, who exhibited 1,612 birds, or approximately the same number as was shown at the 1913 fair.

The educational poultry exhibit put on by the Extension Department at Ames, including demonstrations in poultry dressing, proved to be an attractive and educational feature in this department.

The classification added this year for flock, consisting of one male and ten females properly mated to produce standard specimens, attracted a number of entries and a great deal of attention. The pens for exhibiting the flocks were 6x8 in size and were built on the ground. It would seem that this is the practical way to show poultry. We believe the time will come when practically all utility breeds will be shown in this manner and the numerous classes carried in all premium lists for fancy breeds of poultry will in time be discouraged or eliminated.

The agricultural exhibit was far superior in quality and quantity to what we have had in former years. The new classification for county exhibits brought out seven excellent exhibits. They not only showed in an attractive way what was produced in the county but they also stimulated an interest in the county agent work.

The seventeen individual farm exhibits clearly indicated the diversity of products that may be produced upon an individual farm in the state of Iowa, and they were put up in such shape as to make them educational as well as attractive. The plan of using the score card for the exhibits in the county and individual farm classes provided a better basis for judging and met with the approval of the exhibitors. At the close of the fair the Iowa Agricultural committee of the Panama-Pacific Exposition secured a number of the county and individual farm exhibits as well as some of the specimens of sheaf grain exhibited in the individual classes, for the purpose of making the agricultural exhibit at the San Francisco Exposition in 1915. We are of the opinion that we will hear from these exhibits later when they are placed on exhibition in competition with the products of other states.

The horticultural exhibit was a surprise, not only to the management, but to the visitors at the fair. It seemed to be the prevailing opinion that on account of the dry weather, in the southern part of the state, there were but few apples and products of the orchard available for exhibition purposes this year. However, the horticultural end of the building proved the contrary. There were about 7,000 plates of apples and other fruits on exhibition this year.

In addition to this there were exhibits of apples in commercial packages, ornamental designs in fruit, and a box apple exhibit put on by the department. All these added materially to the horticultural division.

In the dairy end of the building the usual exhibit of dairy equipment and dairy machinery was on display. The Food and Dairy Commissioner also had a booth containing a number of excellent educational exhibits. These consisted principally of a display of pure foods and misbranded foods; also an exhibit showing the nutritive value of a quart of milk compared with other food stuffs of the same value. There were some surprising facts brought out in this exhibit and it created considerable comment and interest. The Food and Dairy Commissioner was also assigned a booth for an exhibit of the weights and measures department. This was made up largely of scales and measures condemned by the department since this law has been in force.

The machinery exhibit presented a different appearance to the visitors than in former years on account of the absence of the large circus tents formerly erected on the grounds to house such exhibits as the International Harvester Company, John Deere, Fairbanks Morse, and four or five other large concerns which had formerly exhibited at the Iowa State Fair.

The exhibit was made by 327 exhibitors as compared with 341 in 1913. The exhibit was more diversified than in previous years and there was a noticeable increase in the number of Iowa manufactured products on exhibition. Practically all of the floor space in the exhibition buildings was sold and the outside space was well filled. The impression seems to have gone out that there was a disagreement between the management of the Iowa State Fair and the large machinery exhibitors and for that reason they did not show this year. Some infer that it was on account of the excessive charge for space and others said it was on account of the failure of the management to furnish the necessary employes tickets to helpers in charge of the exhibits. I wish to say, however, that there is absolutely no foundation for either of these assertions and wish to further state there is no trouble or disagreement between these large concerns and the management of the fair.

In regard to space the rules of the machinery department provide there shall be no charge for outside space other than the $1 necessary to make a legal contract. The rules also provide that employes actually employed in taking care of exhibits, either day or night, will be provided with the necessary helpers' ticket upon application to the superintendent of the machinery department. As to the treatment accorded these large exhibitors at other state fairs we are not in a position to speak, but it is our understanding that these large concerns came to the conclusion shortly after the close of the 1913 fair season that they must retrench and cut their expense accounts in some manner. To this end about a dozen or more firms agreed to not exhibit at any of the state fairs in 1914. Whether this policy proves profitable to them or not we will have to wait and see. To substantiate the statements that there is no trouble between the fair management and these large concerns I wish to quote an article which appeared in the 1914 October issue of the St. Louis Farm Machinery.

"The Iowa State Fair should not come under the general charge of excessive exhibition rates that is being made against various state fairs, according to W. H. Town, general manager of the International Harvester Company, located in Des Moines, Iowa, which firm did not exhibit at the Iowa State Fair this year. 'There is no complaint to be made,' says Mr. Town. 'The fair management always has been liberal in the issuance of passes to employes of exhibitors and the display rate of five cents per square foot is most reasonable when one considers that the space is located in Machinery Hall, which is one of the finest buildings of the kind in the nation. Moreover, the fair management always has given free use of outside space. Machinery Hall is a fireproof building of steel and concrete and there is no objection to the rate charged for display space in this structure. The fair management is in no way to blame on account of the loss of some of the big exhibitors this year. It is an injustice to the management of the Iowa Fair to have such an impression abroad in the land and I would like to help correct this injustice.'"

The Iowa State College at Ames staged a very interesting and educational exhibit again this year. In addition to the exhibit, programs were provided in the College Building auditorium for each forenoon and afternoon of the fair. These programs consisted of lectures, demonstrations, and in a number of cases, motion pictures were used to illustrate the lectures which were given at stated hours twice each day.

Special motion pictures were run of the Iowa State College of Agriculture and Mechanic Arts, showing the 120-acre campus at Ames; the forty or more buildings, experiment stations and student life at the college.

WOMEN AND CHILDREN'S BUILDING.

The Women and Children's Building, which was completed this year, proved to be one of the most attractive places on the grounds. With its wide porches, well arranged and well ventilated rest rooms this building made an ideal resting place for women and small children.

A most comprehensive program in which all the important phases of child life, as well as the most vital questions of interest to women, were brought out in the exhibits in the various departments and by lectures in the large auditorium.

The babies' health contest proved a most interesting feature again this year. The quarters provided for this contest in the Women and Children's Building were found to be most admirably arranged; not only from the fact that the contest was so staged that the public could witness the tests and examinations to advantage and at the same time be comfortably seated, but the reception room, dressing room, and judging rooms were so arranged and equipped that the work of putting on the contest and judging the babies was greatly facilitated.

The exhibits staged in the Women and Children's Building were all new features for the fair this year and they proved to be of interest to the public and were also of an educational nature. The model school room, which was properly lighted and ventilated was furnished with all the latest and most modern school equipment and offered many valuable suggestions in construction and furnishings. The manual training department offered valuable suggestions for instruction and equipment of this department for public schools.

The domestic science department, which was under the direction of the extension department at Ames, afforded excellent programs each day, consisting of lectures and demonstrations on the subject of domestic science.

The art exhibit was hung in the large basement room and was pronounced by artists present to be a revelation in the art exhibition at the Iowa State Fair. The exhibit consisted of oil paintings by leading Iowa artists and a loan exhibit from the Chicago Society of Artists, valued at $25,000. The loan exhibit was made up of some excellent works of art and afforded an opportunity to compare the work of Iowa artists with some of the best work in the middle west.

The public health exhibit put on by the State Board of Health consisted of charts, mechanical devices and models, which suggested a more rational hygiene and diet, sanitary arrangements for the farm home, and discouraged the self-drugging habit.

In addition to this the public health department distributed a great deal of literature on public health subjects and also provided a number of speakers for the daily programs in the large auditorium.

The child welfare exhibit, which was put on by the University of Iowa, consisted principally of charts and the necessary equipment for taking care of small children. The charts offered many valuable suggestions to mothers in the way of instructing them as to the proper clothing, diet and sleeping quarters for the baby.

Another much appreciated feature of the building was the day nursery and play ground. Here children from six months to ten years of age could be left in the care of trained nurses for a nominal fee, and insured mothers that their children would be given proper care and attention. Children between the ages of six months to five years were taken care of in the two rooms constituting the nursery and children between the ages of five and ten years were cared for in a large play room and play grounds, which was fully equipped with swings, slides, teeters, etc.

A new feature added this year was an exhibit of boys' and girls' club work, put on under the direction of E. C. Bishop of Ames, who is in charge of this club work in the state of Iowa for the United States government. This exhibit was housed in the old rest cottage, which was moved to a location near the college building.

The exhibit consisted of the various lines of work which these boys and girls' clubs have undertaken and completely filled three wings of the building.

In addition to these interesting exhibits each forenoon and afternoon a program was put on consisting of canning demonstrations by canning clubs from different sections of the state, showing modern methods of canning fruits and vegetables.

An excellent exhibit of Iowa coal was put on in a building set aside for that purpose, through the cooperation of the State Mine Inspectors and the coal operators in the state of Iowa. This exhibit showed samples of coal from practically every mine in the state of Iowa. The exhibit was also supplemented by charts showing the value of coal produced annually; the number of people employed in the industry and the scale of wages paid, etc.

The Iowa Geological Survey also put on an educational exhibit in the same building, consisting of soil maps and an exhibit of minerals to be found in the state of Iowa; also maps and charts showing where clay, sand and mineral deposits might be found in the state.

The state factory inspection department occupied space in the Machinery Building and made an exhibit of safety appliances and guards for dangerous machinery. A number of these were shown in operation. This brought the factory inspection department in close touch with a number of the manufacturing concerns in the state.

The boys' judging contest, for which five scholarships at the Iowa State College at Ames are offered as prizes, was again a feature of the first day of the fair and was participated in by 104 boys. In addition to the prizes offered this contest offers a short course in live stock judging for the boys who do not participate in the awards and it is commanding more interest each year.

The boys' camp was made up of ninety-eight boys this year, and consisted of one boy from each county in the state, with the exception of Winneshiek and Harrison, and one from the state at large. In Winneshiek county there was a lack of interest, and in Harrison county the boy who had been selected was unable to attend the camp. These boys earned their trip to the Iowa State Fair on a competitive essay contest. The railroad fare and board for these boys were paid by the management. In return for this, they assisted in ushering at the grand stand and live stock pavilion. The camp leaders escorted the boys through the exhibition buildings and explained the exhibits to them. In addition to this, each morning two or three good speakers were asked to talk to the boys in attendance at the camp. Immediately after the boys returned to their homes they submitted essays on "What I Saw and Learned at the Iowa State Fair," and their essays would indicate that the week spent at the Iowa State Fair was profitable to them.

FAIR FINANCES.

The total receipts of the 1914 fair were $188,644.66. This is $187.44 less than the receipts of the 1913 fair. The receipts from the outside gates fell off $4,539.75, which was due to the storm on Monday night previously referred to. There was also a decrease of $898.75 in the receipts of the night horse show in the stock pavilion. This was also due to the storm Monday night, which put out the lights about 8 o'clock and prevented the show from going on and also necessitated a refund of admissions. The receipts of the afternoon and evening shows in front of the grand stand showed an increase of $3,200.50 over last year. The total receipts from all ticket sales at outside gates, grand stand and stock pavilion show a decrease of $2,136.25 from last year. The receipts of fair from the various departments and sources, other than ticket sales, were $59,916.16, or an increase of $1,948.81 over last year.

The total expense of conducting the 1914 fair was $170,436.18, which was an increase of $23,696.16 over the cost of the 1913 fair. The principal items of expense accountable for this increase are as follows: There was paid out in cash premiums in all departments this year, $66,024.85. This was an increase of $4,954.95 over the amount paid out at the 1913 fair. This increase was due to new classes added and the increased number of exhibits, especially in the live stock departments, which necessitated the awarding of a greater percentage of the premiums offered than in former years.

Advertising the fair cost $13,117.94, an increase of $1,299.60 over last year. This item, however, only exceeds the advertising budget approved by the board by $177.94.

This year music and attractions cost $26,374.55, which is $6,766.85 more than was expended for music and attractions for the 1913 fair and $364.90 less than for the 1912 fair.

The increased cost of music and attractions over last year is due to the contract made with Lincoln Beachey about six weeks prior to the opening of the fair, after contracts had been closed for all attractions which the management had expected to employ.

The question is sometimes asked and has been freely discussed at the annual meetings of the American Association of Fairs and Expositions whether the racing amusement features of our state fairs are becoming top heavy. One of the speakers assigned to this subject in 1912 collected data in regard to this from a great many of the state fairs. The figures produced showed that the receipts from grand stand admissions, grand stand concessions and entry fees in the speed department, came within nine per cent of paying the entire cost of the racing and amusement program, including all music.

We are pleased to note that the Iowa State Fair did considerably better than that this year. After paying for the entire cost of the speed program, including payroll of employes in that department, all music and attractions, and the auto races, there was a net profit from the receipt of grand stand admissions and grand stand concessions of $2,578. I do not believe any fair-minded man would say that the receipts of the outside gates would not suffer if the management would eliminate the amusement and racing features, yet all are paid for without touching one cent taken at the outside gates. Other items entering into the increased cost of the fair were $2,835 for auto races, which took place on Friday, an added day this year; forage cost $2,463 more; payrolls were increased $2,600 on account of the added day and the help required in the Women and Children's building, which was a new department this year.

The attached statement sets forth the receipts and disbursements of the fair and the Iowa Department of Agriculture for the fiscal year ending November 30, 1914, and shows the profit on the 1914 fair to be $18,208.48, and the balance on hand $968.73.

IMPROVEMENTS.

There was expended for permanent improvements upon the fair grounds during the year 1914, $100,649.13. Of this amount, $46,468.19 was for the Women and Children's building and paid from state appropriation. The balance, $54,180.94, was paid from fair receipts, and $20,000, which the board was obliged to borrow after the close of the fair to pay bills for material and balances due on contracts. The cost of, and the principal improvements made this year, and paid for out of the department funds were the new cattle barn, which stalls 108 head of cattle, $5,893.80; the subway under the race track, which made it possible to show the harness and saddle horses in the center field each afternoon, without interfering with the races, $6,657.92; cooling out paddock for horses entered in races, $9,867.19; extension to street car station, $3,204.26; cement walks and curbing, $3,019.74; additional land, $1,445.77; Women and Children's building and furnishings, over and above state appropriation, $5,892.81; coin controlled turnstiles for outside gates, $1,490.92; opera chairs for amphitheater, $1,268.78; addition to forage barn, $902.69, and numerous other improvements itemized in the attached statement and which the management felt they were obliged to make before the opening of the fair.

ITEMIZED STATEMENT OF RECEIPTS AND DISBURSEMENTS OF THE IOWA DEPARTMENT OF AGRICULTURE FOR THE FISCAL YEAR ENDING NOVEMBER 30, 1914.

RECEIPTS.

Cash balance December 1, 1914		$ 18,505.82
Receipts from sources other than fair:		
Fees—Stallion registration division	$ 10,666.50	
Fair grounds collections:		
Stall rent speed barns	344.15	
Pasture rent	122.95	
Rent poultry cooping	185.00	
Smoke stack from light plant	50.00	
Balance on engine from light plant	35.65	
Fan from dry closet	10.00	
Sale of forage left over from 1913 fair	181.72	
Hauling water	8.90	
Miscellaneous	.50	
House rent	33.00	
Horse sale, grounds rental	100.00	
Kindling wood and old lumber	75.00	
Sale of old iron	10.00	
Rent of buildings for storage	100.00	

Bills payable	20,000.00	
State appropriation, Women's and Children's bldg.	46,468.19	
State appropriation, insurance	1,000.00	
State appropriation, support Dept. of Agriculture.	3,800.00	
Sale of turnstiles	280.00	
Insurance, damage to Poultry Building	79.40	
Adventist meeting, labor	16.50	
Suspension account 1913 fair	117.00	
Ground rental, Labor day 1914	100.00	
Interest on bank balance	247.97	
Refund, taxes on land purchased	35.69	
Total receipts other than fair or ticket sales		$ 84,068.12

Receipts of fair:

Stall rent, horse department		$ 2,031.00
Stall rent, cattle department		1,159.00
Pen rent, swine department		997.00
Pen rent, sheep department		147.00
Coop rent, poultry department		366.75
Space rental, poultry department		158.40
Space rental, machinery department:		
Floor space, Machinery hall	$ 3,377.50	
Floor space, Power hall	288.75	
Floor space, Automobile show	1,267.80	
Outside ground contracts	156.00	
Miscellaneous space	10.87	5,100.92
Space rental, Agricultural building		1,195.00
Space rental, Dairy department		455.38
Sale of ice cream, Dairy department		1,373.20
Space rental, Exposition building		2,601.50

Concession and privileges dept:

Concessions and privileges	$20,556.85	
World at Home Shows (percentage)	3,358.42	
Independent shows (percentage)	522.46	
Grand Stand and Stock Pavilion:		
Refreshment privilege (percentage)	960.94	
Score card privilege (percentage)	404.35	
Cushion privilege (percentage)	25.95	25,828.97
Eentry fees, Speed department		3,674.50
Suspensions, Speed department		133.50
Sale of forage		7,900.13
Association special premiums		5,223.49
Advertising in premium list		904.50
Entry fees, saddle horse stake		280.00
Entry fees, Speed department		3,674.50
Entry fees, Western Breeders' Futurity		100.00
Labor for World at Home		39.00
Sale of apples, Horticultural department		15.50
Telephone collections		231.42
Total receipts of fair other than ticket sales		$ 59,916.16

Ticket sales:			
Exhibitors' tickets (sold by Sec'y)	$ 3,058.00		
Outside gates	82,099.25		
Day amphitheater	23,656.00		
Night amphitheater	17,310.25		
Live Stock and Hippodrome Show	2,605.00		
Total ticket sales		$128,728.50	
Total receipts of fair			$188,644.66
Grand total receipts			$291,218.60

DISBURSEMENTS.

Expense other than for Fair or Improvements:			
Publicity Department:			
Superintendent, salary 7 months	$ 1,166.62		
Clerk and stenographer, salary 6 months	450.00		
Printing 64,000 Greater Iowa	707.49		
Postage on Greater Iowa	35.74		
Folding and mailing Greater Iowa	19.50		
Cuts and electros	59.54		
Miscellaneous printing	63.87		
Envelopes and wrapping paper	43.62		
Supplies	49.64		
Miscellaneous expense	18.15	$ 2,614.17	
Stallion Registration Division:			
Salaries and clerical hire	$ 3,135.74		
Printing report	480.64		
Traveling expenses	16.48		
Stud books	51.90		
Printing certificates	178.70		
Engraving	1.35		
5,000 stickers, permanent certificates	12.42		
Folding laws	3.50		
Supplies	13.96	$ 3,894.69	
Expense account of 1913 Fair		143.85	
Annual meeting and State Agr'l Convention		600.21	
Miscellaneous expense other than Fair		102.24	
Hauling poultry cooping		92.50	
Office furniture and fixtures		188.65	
Insurance premiums		1,830.16	
Hauling kindling wood		3.00	
Futurity No. 1		21.65	
Futurity No. 2		78.85	
Horse sales, labor cleaning barns after sale		72.00	
Adventist meeting, labor cleaning grounds after meeting		16.50	
Poultry building, repairs covered by insurance		79.40	
Motion picture film 1914 fair		695.16	
Interest and discount		1,166.67	
Total expense other than for Fair or Improvements			$ 11,599.70

Expense of Fair other than premiums:

Executive committee meetings		$ 884.50
Special committee meeting		1,780.98
Express, telegraph and telephone		441.22
Postage		1,418.86
Printing:		
Tickets for admission at all gates and side shows	$ 644.60	
Ring and stall cards	114.00	
Entry blanks, all departments	51.95	
Premium list and advance sheets	1,205.00	
Premium list envelopes	34.17	
Premium list and envelopes, Educational department	49.50	
Boys' camp circulars	53.50	
Boys' judging contest circulars	13.75	
Crop cards	27.50	
Programs and entry lists, Speed dept.	77.50	
Entry, premium, shipping and coop tags	109.45	
Contracts and receipt books	51.20	
Record books	74.00	
Judging programs, Horse dept.	20.21	
Horse Show programs	49.00	
Covers for speed programs	87.00	
Covers for Horse Show premium list	10.80	
Entry books (two)	19.00	
Multigraph letters	24.15	
Premium and expense warrants	25.00	
Ribbon badges, ticket takers, etc.	25.50	
Order blanks and books	24.70	
Bill heads	9.75	
Statements (premiums paid)	12.85	
Baby health contest circulars	5.20	
Art exhibit circulars	5.75	
Catalog cards	9.65	
Invitations and envelopes	8.75	
Payroll blanks	9.50	
Placards and printed notices	43.80	
Miscellaneous printing	21.75	$ 2,918.48
Advertising:		
472 country weekly papers	$3,022.12	
Plates and electros, weekly papers	774.60	
17 daily papers outside Des Moines	324.77	
Des Moines daily papers	1,267.16	
Agricultural and live stock papers	1,264.32	
Horse papers, advertising speed programs	797.00	
Misc. papers and magazines	95.00	
Supt. advertising, five months' salary	833.30	
Clerk and stenog., 5 mos. salary	375.00	
Printing 67,700 Greater Iowa	692.98	
Postage on Greater Iowa	62.34	

Folding and mailing Greater Iowa	29.13	
Special articles for Greater Iowa	18.50	
11,025 special hangers, showing buildings	1,101.25	
300 window cards	72.00	
4,000 post cards of buildings	23.75	
125,000 2-color 8-page heralds	275.00	
8,000 outdoor signs	121.97	
2,400 monthly calendars	73.21	
500 large daily programs	49.50	
8,000 Sunday concert programs	16.00	
Dates and billboard paper	71.05	
Billboard service	453.40	
50,000 gummed stickers (dates)	55.23	
Mailing tubes	39.90	
County agents (distributing adv)	781.20	
Photos of buildings and 1914 fair	90.50	
Cuts and electros	125.56	
Ding drawing for county newspaper adv.	20.00	
Advertising in directory and catalog	30.00	
Posters for moving pictures	49.00	
Slides and titles for moving pictures	93.50	
Bill poster tacks	8.00	
Gummed stickers (for posting lithos)	2.90	
Subscription to Billboard	4.00	
Mailing list, Implement Dealers.	4.80	$ 13,117.94
Music and Attractions:		
Conway's Band, 40 pieces, 8 days	$ 2,800.00	
Henry's Band, 40 pieces, 7 days	1,550.00	
Landers' Band, 25 pieces, 7 days.	790.00	
Hutton's Orchestra, 16 pieces, 7 days	436.00	
Graham's Orchestra, 16 pieces, 7 days	436.00	
National Drum Corps, 25 pieces, 7 days	300.00	
Quist's Orchestra, 8 pieces, 7 days	350.00	
Philharmonic Choir, Sunday night, 150 voices	500.00	
Six vaudeville acts	3,550.00	
DuBrock Hippodrome	1,350.00	
Night Show at Grand Stand	7,500.00	
Property men and laborers	212.55	
Six-in-hand pony team	100.00	
Hankinson's Auto Polo, 7 days	1,500.00	
Lincoln Beachey, aeroplane flights	5,000.00	$ 26,374.55
Light and power (current)		719.56
Light and power (labor)		753.83
Water for August and September		453.75
Supplies, stationery, etc		461.77
Forage purchased		7,095.65
Salaries, secretary and clerical force		6,431.10
Board meetings on account of fair		548.90

Assistants and foremen, grounds dept		834.25
Scavenger work, care of closets, etc		1,162.75
Track work		176.25
Streets, oiling and other work		1,020.09
Refunds:		
Refund stall rent, horse department	$ 261.00	
Refund stall rent, cattle department	53.00	
Refund admission tickets	108.15	
Refund entry fee, Western B. Futurity	100.00	
Refund concession, Agricultural Bldg.	25.00	$ 547.15
Cleaning and preparing grounds		925.42
Cleaning and preparing buildings		1,161.02
Payroll, Concession department		1,826.20
Payroll, Treasurer's department		1,534.00
Payroll, Speed department		928.05
Payroll, Horse department		1,962.70
Payroll, Cattle department		1,188.44
Payroll, Swine department		539.95
Payroll, Sheep department		305.30
Payroll, Poultry department		399.75
Payroll, Machinery department		696.80
Payroll, Agricultural department		658.80
Payroll, Dairy department		953.29
Payroll, Horticultural department		305.84
Payroll, Floricultural department		104.00
Payroll, Textile and China department		658.60
Payroll, School Exhibits department		522.94
Payroll, Admissions department		2,770.50
Payroll, Public Safety department		5,187.37
Payroll, Ticket Auditing department		334.00
One-half expense State College Exhibit		799.99
Payroll, Boys' Judging Contest		54.75
Expense Boys' Encampment		1,570.16
Payroll and Expense Graphic and Plastic Arts department		430.83
Payroll reporting awards		243.50
Payroll, Gen'l Supt. Dept. W. & C. Bldg		119.00
Payroll, janitors, Administration Bldg		309.25
Payroll, janitors, Women & C. Bldg		338.75
Payroll, Model School department		80.00
Payroll, Child Welfare department		48.00
Payroll, Public Health department		44.00
Payroll, Baby Health contest		689.96
Plants and flowers		551.21
Coal and firing boilers		97.32
Dues Am. Trotting Association		100.00
Dues Am. Ass'n Fairs and Expositions		35.00
Care of Camp Ground lights		31.00
Meals served guests and on State Day		153.80
Rental two sulkies, Speed department		24.48
Straw used by Speed and Cattle depts		32.90
Putting up awnings and flags		47.15
Rental, grounds for storage of hog crates		10.00
Rental uniforms for property men		11.50
Lost exhibits		10.00

Laundry work dining room	5.55	
Misc. labor, Aug. 9-22, inc	149.25	
Misc. labor, Aug. 23-Sept. 5, inc	523.13	
Misc. expense of Fair	6.70	
Freight and drayage	241.54	
Automobile races	2,835.20	
Calcium Chloride for track and barns	461.54	
Placing Amphitheater chairs	75.75	
Tan Bark for Paddock and Stock Pavilion	188.64	
Temporary Horse Barns (labor)	129.75	
Temporary Cattle Barns (labor)	25.25	
Depreciation on lumber in temporary structures	264.64	
Water system, temporary extension and repairs.	170.52	
Decorating buildings	1,012.06	
Fences, closing holes	22.00	
Turnstiles, mechanics during Fair	51.00	
Closing buildings	98.38	
Ground supplies	104.83	
Miscellaneous signs, used during Fair	186.40	
Premium ribbons and badges	819.03	
Rental tents, bedding, chairs, etc	1,103.07	
Total expense of Fair other than premiums.		$104,411.33

CASH PREMIUMS PAID.

Horses	$ 18,437.50	
Cattle	12,673.25	
Swine	4,499.00	
Sheep	2,779.00	
Poultry	1,036.50	
Agriculture	5,398.00	
Pantry and kitchen	1,251.00	
Dairy	652.00	
Horticulture	1,680.00	
Floriculture	1,535.60	
Textile China, etc	1,183.00	
Graphic and plastic arts	561.00	
School exhibits	931.00	
Scholarships, Iowa State College	125.00	
Speed premiums	13,283.00	
Total premiums paid		$ 66,024.85
Total expense of fair		$170,436.18

PERMANENT IMPROVEMENTS.

Light system, extensions and electroliers	$ 1,345.27
Streets, cinders and grading	779.71
Walks and curbing (new)	3,019.74
Tools and implements	300.05
Women's and Children's Bldg. (new)	52,361.00
Subway (new)	6,657.92
Cattle barn (new)	5,893.80
Miscellaneous improvements	339.38
Additional land purchased	1,445.77
Drainage	1,080.77
Trees and shrubs, permanent planting	30.50

Farm house improvements	127.20	
Cooling out paddock (new)	9,867.19	
Forage barn, addition and improvements	902.69	
Drainage, storm sewer	676.00	
Agricultural building, booths, tables, etc	804.46	
Exposition building, band stand, booths, etc	398.55	
Street car station, extension (new)	3,204.26	
Grading	472.57	
Steeple chase track and show ring	566.55	
Bleachers, dressing rooms	541.18	
Stock pavilion	8.00	
Track fence	139.66	
Amphitheater, chairs and improvements	1,268.78	
Swine pavilion, painting structural steel	354.25	
Outside fence (new)	732.79	
Coin turnstiles	1,490.92	
Poultry building, coops and pens	75.48	
Water system, extensions	126.25	
Brick horse barns	183.32	
Administration building	163.46	
Power hall, shingling and painting	952.57	
Boys' and Girls' club building	51.75	
Auto park fencing	389.25	
Play ground equipment	290.92	
Carbon lamps	528.66	
Sheep barn	100.52	
Lumber returned to yard less 20 per cent	1,058.54	
Mines and mining building (purchased)	488.14	
Judges' stand in show ring	20.00	
Hurdles and jumps	100.85	
Stage in centerfield	86.28	
Machinery hall	21.37	
School exhibits building	164.60	
Vaudeville stages	80.58	
Meat market	14.48	
Brick dining halls	98.60	
Simplicity timer, speed department	35.00	
Coin counting machine	65.00	
Share in three speed wagons	38.97	
Electric fans, Women and Children's Bldg	83.50	
Garbage cans	90.00	
Flags for building	76.50	
Measuring standard horse (dept.)	2.50	
Telephone exchange, extensions	275.88	
Toilets	2.55	
Iowa State College building	35.90	
Office furniture, grounds	91.35	
Valley Junction dining hall	47.40	
Total permanent improvements		$100,649.13

MAINTENANCE GROUNDS AND BUILDINGS.

Superintendent and assistants	$ 1,606.80
Miscellaneous maintenance	350.04
Cleaning and care of grounds	464.79
Cleaning and care of buildings	63.53
Hauling manure	202.83
Race track work except during fair	513.07
Mule and horse teams, keep	200.93

Tools and implements, repairs	295.35	
Streets, dragging, etc	119.96	
Moving and repairing miscellaneous bldgs	194.58	
Seeding and planting	50.75	
Flower beds	18.70	
Walks, repairs	39.37	
Moving vaudeville stages	212.54	
Water system, repairs	119.30	
Administration Bldg., repairs and painting roof	86.00	
Amphitheater repairs	44.35	
Grading, miscellaneous	16.00	
Closets, repairs	71.71	
Swine pavilion, repairs	32.45	
Drayage, material from city	126.05	
Mowing grass and weeds	538.80	
Painting metal roofs	94.87	
Power hall, moving and repairing	1,208.26	
Fence repairs	14.50	
Repairing miscellaneous buildings	218.47	
Machinery hall, repairs and painting	104.26	
Water bills, except August and September	229.72	
Agricultural building, repairs and painting roof	151.19	
Locks and turnstiles repairs	18.00	
Sheep barn repairs	40.38	
Trimming trees	36.48	
Bridge repairs	18.00	
Lawn seats, repairs	21.08	
Cattle barns, repairs	41.75	
Total maintenance		$ 7,564.86
Grand total disbursements		$290,249.87

SUMMARY OF RECEIPTS AND DISBURSEMENTS AND RECONCILIATION OF ACCOUNTS WITH TREASURER.

Receipts:			
Cash balance Dec. 1, 1913			$ 18,505.82
Receipts from sources other than fair			84,068.12
Receipts of fair other than ticket sales		$ 59,916.16	
Receipts of fair from ticket sales		128,728.50	
Total receipts of fair			$188,644.66
Grand total receipts			$291,218.60
Disbursements:			
Disbursements other than fair or improvements		$ 11,599.70	
Expense of fair other than premiums	$104,411.33		
Cash premiums paid	66,024.85		
Total cost of fair		$170,436.18	
Cost of permanent improvements		100,649.13	
Cost of maintenance of grounds and buildings		7,564.86	
Total disbursements			$290,249.87

Balance on hand Nov. 30, 1914	$ 968.73
Warrants outstanding	689.41
Cash balance in treasury Nov. 30, 1914	$ 1,658.14

REPORT OF TREASURER.

G. S. GILBERTSON.

Gentlemen:

I present herewith, report of receipts and disbursements for the fiscal year, ending November 30, 1914, as follows:

RECEIPTS.

Balance on hand November 30, 1913		$ 18,759.32
Received from sale of tickets and cash turnstiles as follows:		
From cash turnstiles	$ 60,755.50	
29062 general admissions (50c)	14,531.00	
2867 general admissions (25c after 5 p. m.)	716.75	
10900 children and half-fare (25c)	2,725.00	
1706 round-up tickets (50c)	853.00	
1224 campers at $2.00 each	2,448.00	
14 automobiles for week at $5.00 each	70.00	
30969 day amphitheater (reserve at 50c)	15,484.50	
2421 day amphitheater (box seats at 75c)	1,815.75	
21609 day amphitheater (bleachers 25c)	5,402.25	
3814 day amphitheater (quarter stretch 25c)	953.50	
20777 night amphitheater (reserved at 50c)	10,388.50	
1710 night amphitheater (box seats at 75c)	1,282.50	
22557 night amphitheater (bleachers 25c)	5,639.25	
4821 night stock pavilion (50c)	2,410.50	
778 night stock pavilion (standing room) (25c)	194.50	
1529 exhibitors' tickets at $2.00 (sold by Secretary)	3,058.00	
Total ticket sales		$128,728.50
Received from Superintendents of Departments as follows:		
Fees stallion registration division	$ 10,666.50	
State appropriations	51,268.19	
Bills payable	20,000.00	
Fair Ground collections:		
Stall rent	344.15	
Pasture rent	122.95	
Miscellaneous collections	789.77	
Interest on monthly balance	247.97	
Secretary miscellaneous receipts	628.59	
Superintendent of Horse department	2,031.00	
Superintendent of Cattle department	1,159.00	
Superintendent of Swine department	997.00	
Superintendent of Sheep department	147.00	
Superintendent of Poultry department (coop rent)	366.75	

Superintendent of Poultry department (space rent)	158.40	
Superintendent of Machinery department	5,100.92	
Superintendent of Agricultural department	1,195.00	
Superintendent of Dairy department (space rental)	455.38	
Superintendent of Dairy department (ice cream sales)	1,373.20	
Superintendent of Exposition Building	2,601.50	
Superintendent of Concessions and privileges	25,828.97	
Superintendent of Speed department (entry fees)	3,674.50	
Superintendent of Speed department (suspensions)	133.50	
Secretary, Forage department	7,900.13	
Secretary, Association special premiums	5,223.49	
Secretary, Advertising in premium lists	904.50	
Secretary, miscellaneous collections	665.92	
Total receipts other than ticket sales		$143,984.28
Grand total receipts		$291,472.10

DISBURSEMENTS.

Paid expense warrants	$223,944.18	
Paid premium warrants	65,869.78	
Total disbursements		$289,813.96
Balance on hand November 30, 1914		$ 1,658.14

Respectfully submitted this 8th day of December, 1914.

G. S. GILBERTSON, Treasurer.

Des Moines, Iowa, December 2, 1914.

To the Directors of the State Board of Agriculture.

Gentlemen: This is to certify that there was on deposit in the Iowa Trust and Savings Bank on November 30, 1914, to the credit of G. S. Gilbertson, Treasurer of the Iowa Department of Agriculture, the sum of One Thousand Six Hundred Fifty-eight Dollars and Fourteen Cents ($1,658.14).

Yours very truly,

L. M. BARLOW, Cashier.

ADMISSIONS TO GRAND STAND, AFTERNOON AND EVENING, 1914, COMPARED WITH 1913.

	1914 Fair		1913 Fair	
	Day Admissions	Night Admissions	Day Admissions	Night Admissions
Friday	3,570	5,243	3,731	5,865
Saturday	5,406	5,921	4,911	5,848
Monday	10,883	9,151	11,358	17,316
Tuesday	7,922	8,018	12,162	15,966
Wednesday	12,927	11,741	7,742	8,226
Thursday	8,506	7,295	4,276	1,600
Friday	13,174			
Total admissions	62,388	47,369	44,180	54,821

ADMISSION TO LIVE STOCK AND HIPPODROME SHOW, 1914, COMPARED WITH 1912 AND 1913.

	1914	1913	1912
Saturday	806	1,042	
Monday	957	1,826	1,233
Tuesday	2,113	2,472	2,265
Wednesday	1,264	1,566	2,070
Thursday	605	438	1,262
Total admissions	5,745	7,344	6,830

PHILHARMONIC CHOIR, SACRED CONCERT, SUNDAY NIGHT.

	1914	1913
Sunday	671	1,727

RECAPITULATION TICKET SALES, 1914 FAIR, COMPARED WITH 1913.

	1914			1913		
	Number	Price	Total value	Number	Price	Total value
General admission	134,985	$ .50	$67,492.50	142,870	$ .50	$ 71,435.00
Gen. admission after 5 p. m.	14,095	.25	3,523.75	16,671	.25	4,167.75
Children and half fare	30,721	.25	7,680.25	32,802	.25	8,200.50
Camper's round-up	1,706	.50	853.00	-------	----	----------
Campers	6,120	.40	2,448.00	7,720	.40	3,088.00
Exhibitors	8,492	.36	3,058.00	7,035	.38	2,704.00
Total paid admissions	196,119	----	$85,055.50	207,098	----	$ 89,595.25
DAY AMPHITHEATER.						
Bleachers and paddock	21,609	$ .25	$ 5,402.25	15,214	$ .25	$ 3,803.50
Quarter stretch	3,814	.25	953.50	2,469	.25	617.25
Reserved seats	30,969	.50	15,484.50	24,950	.50	12,475.00
Reserved box	2,421	.75	1,815.75	1,777	.75	1,332.75
Total day amphitheater	58,813	----	$23,656.00	44,410	----	$ 18,228.50
NIGHT AMPHITHEATER.						
Bleachers and paddock	22,557	$.25	$ 5,639.25	30,039	$.25	$ 7,509.75
Reserved seats	20,777	.50	10,388.50	21,808	.50	10,904.00
Reserved box	1,710	.75	1,282.50	1,498	.75	1,123.50
Total night amphitheater	45,044	----	$17,310.25	53,345	----	$ 19,537.25
STOCK PAVILION.						
Reserved seat	4,821	$ .50	$ 2,410.50	5,912	$ .50	$ 2,956.00
Standing room	778	.25	194.50	2,191	.25	547.75
Total stock pavilion	5,599	----	$ 2,605.00	8,103	----	$ 3,503.75
MISCELLANEOUS.						
Over on cash turnstiles	------	----	$ 31.75	------	----	----------
14 auto tickets at $5.00	------	----	70.00	------	----	--------
Total ticket sales	------	----	$128,728.50	------	----	$130,864.75

RECAPITULATION—Continued

	Number	Total value
OUTSIDE GATES.		
1913	207,098	$ 89,595.25
1914	196,119	85,055.50
Decrease	10,979	$ 4,539.75
DAY AMPHITHEATER.		
1914	58,813	$ 23,656.00
1913	44,410	18,228.50
Increase	14,403	$ 5,427.50
NIGHT AMPHITHEATER.		
1913	53,345	$ 19,537.25
1914	45,044	17,310.25
Decrease	8,301	$ 2,227.00
STOCK PAVILION.		
1913	8,103	$ 3,503.75
1914	5,599	2,605.00
Decrease	2,504	$ 898.75
TOTAL TICKET SALES.		
1913		$130,864.75
1914		128,728.50
Decrease		$ 2,136.25

COMPARATIVE STATEMENT OF RECEIPTS, 1913 AND 1914 FAIRS.

	1914	1913	Increase	Decrease
Horse department	$ 2,031.00	$ 1,751.00	$ 280.00	------------
Cattle department	1,159.00	970.00	189.00	------------
Swine department	997.00	784.00	213.00	------------
Sheep department	147.00	118.00	29.00	------------
Poultry department	525.15	691.05	------------	$ 165.90
Machinery department	5,100.92	5,184.40	------------	83.48
Agricultural department	1,195.00	2,115.00	------------	920.00
Dairy department	1,828.58	1,679.50	149.08	------------
Exposition department	2,601.50	2,665.00	------------	63.50
Concession department	25,828.97	25,836.16	------------	7.19
Speed department	3,808.00	4,453.80	------------	645.80
Forage department	7,900.13	5,043.84	2,856.29	------------
Association specials	5,223.49	5,535.49	------------	312.00
Premium list advertising	904.50	799.00	105.50	------------
Miscellaneous receipts	434.50	53.50	381.00	------------
Telephone exchange	231.42	258.56	------------	27.14
Ticket sales	128,728.50	130,864.75	------------	2,136.25
Police department	------------	29.05	------------	29.05
Totals	$ 188,644.66	$ 188,832.10	$ 4,202.87	$ 4,390.31

COMPARATIVE STATEMENT OF EXPENSE, OTHER THAN PREMIUMS, 1913-1914 FAIRS.

	1914	1913	Increase	Decrease
Executive committee meeting	$ 884.50	$ 1,166.50	------------	$ 282.00
Special committee meetings	1,780.98	1,453.43	$ 327.55	------------
Express, telegraph and telephone	441.22	351.94	89.28	------------
Postage	1,418.86	1,126.00	292.86	------------
Printing	2,918.48	2,898.80	19.68	------------
Advertising	13,117.94	11,818.34	1,299.60	------------
Music and attractions	26,374.55	19,607.70	6,766.85	------------
Light and power (current)	719.56	639.97	79.59	------------
Light and power (labor)	753.83	754.72	------------	.89
Water, August and September	453.75	633.95	------------	180.20
Supplies, stationery, etc.	461.77	588.02	------------	126.25
Forage purchased	7,095.65	4,632.50	2,463.15	------------
Salaries, sec'y and clerical force	6,431.10	4,646.74	1,784.36	------------
Board meetings on account of fair	548.90	547.10	1.80	------------
Assistants and foremen grounds dept.	834.25	926.94	------------	92.69
Scavenger work, care of closets, etc.	1,162.75	863.63	299.12	------------
Track work	176.25	364.54	------------	188.29
Streets, oiling and other work	1,020.09	896.76	123.33	------------
Refunds, stall rent, etc.	547.15	477.00	70.15	------------
Cleaning and preparing grounds	925.42	1,277.05	------------	351.63
Cleaning and preparing buildings	1,161.02	796.20	364.82	------------
Payroll concessions department	1,826.20	1,507.50	318.70	------------
Payroll treasurer's department	1,534.00	1,604.20	------------	70.20
Payroll speed department	928.05	909.95	18.10	------------
Payroll horse department	1,962.70	1,502.20	460.50	------------

COMPARATIVE STATEMENT OF EXPENSE—Continued

	1914	1913	Increase	Decrease
Payroll cattle department	1,188.44	1,236.34		47.90
Payroll swine department	539.95	539.70	.25	
Payroll sheep department	305.30	369.25		63.95
Payroll poultry department	399.75	285.05	14.70	
Payroll machinery department	696.80	653.90	42.90	
Payroll agricultural department	658.80	600.80	58.00	
Payroll dairy department	953.29	821.54	131.75	
Payroll horticultural department	305.84	293.07	12.77	
Payroll floricultural department	104.00	91.50	12.50	
Payroll textile and china department	658.60	564.50	94.10	
Payroll school and exhibits department	522.94	284.65	238.29	
Payroll admissions department	2,770.50	2,789.00		18.50
Payroll public safety department	5,187.37	4,627.54	559.83	
Payroll ticket auditing department	334.00	495.63		161.63
One-half expense State College exhibit	799.99	796.18	3.81	
Payroll boys' encampment	54.75	69.80		15.05
Expense boys' encampment	1,570.16	1,447.91	122.25	
Payroll reporting awards	243.50		243.50	
Payroll Gen. Supt. W. and C. bldg.	119.00		119.00	
Payroll janitors, Administration bldg	309.25	566.50		257.25
Payroll janitors W. & C. bldg	338.75		338.75	
Payroll graphic and plastic arts dept.	430.83		430.83	
Payroll model school department	80.00		80.00	
Payroll child welfare department	48.00		48.00	
Payroll public health department	44.00		44.00	
Payroll baby health contest	689.96	292.45	397.51	
Plants and flowers	551.21	637.83		86.62
Freight and drayage	241.54	93.15	148.39	
Automobile races	2,835.20		2,835.20	
Calcium chloride for track and barns	461.54		461.54	
Placing amphitheater chairs	75.75	135.45		59.70
Tan bark	188.64	190.15		1.51
Temporary horse barns	129.75	100.00	29.75	
Temporary cattle barns	25.25		25.25	
Depreciation on lumber, temp'ry struct.	264.64		264.64	
Water system	170.52	195.71		25.19
Decorating buildings	1,012.06	900.00	112.06	
Fences, closing holes	22.00	24.75		2.75
Turnstiles, mechanics	51.00	24.00	27.00	
Closing buildings	98.38	165.00		66.62
Ground supplies	104.83	371.25		266.42
Miscellaneous signs	186.40		186.40	
Premium ribbons and badges	819.03	847.87		28.84
Rental tents, bedding, chairs, etc	1,103.07	972.63	130.44	
Miscellaneous expense of fair	1,237.78	1,331.55		93.77
Expense womans' rest cottage		57.90		57.90
Expense Pioneer Day		149.00		149.00
Expense Girls' Canning Club		60.60		60.60
Outside show ring		31.50		31.50
Hauling manure		299.00		299.00
Telephone exchange		165.79		165.79
Totals	$ 104,411.33	$ 85,670.12	$21,992.85	$ 3,251.64

COMPARATIVE STATEMENT OF PREMIUMS PAID, 1913-14.

Department	Amount Paid 1914	Amount paid 1913	Increase	Decrease
Horses	$ 18,437.50	$ 15,612.50	$ 2,825.00	------------
Cattle	12,673.25	12,623.00	50.25	------------
Swine	4,449.00	4,404.00	95.00	------------
Sheep	2,779.00	2,317.00	462.00	------------
Poultry	1,036.50	1,172.50	------------	$ 136.00
Agriculture	5,398.00	4,173.00	1,225.00	------------
Pantry and kitchen	1,251.00	1,215.00	36.00	------------
Dairy	652.00	602.00	50.00	------------
Fruits	1,680.00	1,614.00	66.00	------------
Plants and flowers	1,535.60	1,439.40	96.20	------------
Fine arts	1,183.00	1,658.50	------------	------------
Graphic and plastic art	561.00	------------	85.50	------------
School exhibits	931.00	665.00	266.00	------------
Babies' health contest	------------	304.00	------------	304.00
Scholarships Iowa State College	125.00	650.00	------------	525.00
Speed	13,283.00	12,620.00	663.00	------------
Totals	$ 66,024.85	$ 61,069.90	$ 5,919.95	$ 965.00

Total increase in premiums, $4,954.95.

SPEED DEPARTMENT, IOWA STATE FAIR AND EXPOSITION, SUMMARY REPORT, 1914.

HARNESS RACES.

Class	Amount of Purse	Amount paid	Entry Fees	Net Cost	No. of Starters
EARLY CLOSING.					
2-year-old trot	$ 500.00	$ 395.00	$ 235.00	$ 160.00	9
3-year-old trot	1,000.00	760.00	330.00	430.00	8
2:30 trot	1,000.00	720.00	450.00	270.00	8
2:20 trot	1,000.00	720.00	320.00	400.00	9
2-year-old pace	500.00	400.00	150.00	250.00	7
3-year-old pace	800.00	640.00	248.00	392.00	7
2:25 pace	1,000.00	690.00	340.00	350.00	3
2:14 pace	1,000.00	720.00	370.00	350.00	9

SPEED DEPARTMENT—Continued

Class	Amount of purse	Amount Paid	Entry Fees	Net Cost	No of Starters
LATE CLOSING.					
2:25 trot	700.00	560.00	168.00	423.50	8
Refund on entry fee		31.50			
2:17 trot	700.00	560.00	115.50	455.00	5
Refund on entry fee		10.50			
2:14 trot	700.00	525.00	63.00	462.00	3
2:10 trot	900.00	675.00	81.00	594.00	3
2:30 pace	600.00	480.00	90.00	399.00	5
Refund on entry fee		9.00			
2:20 pace	600.00	480.00	72.00	408.00	4
2:17 pace	600.00	480.00	126.00	381.00	7
Refund on entry fee		27.00			
2:12 pace	600.00	480.00	126.00	354.00	7
2:09 pace	900.00	720.00	108.00	612.00	4
Free-for-all pace	800.00	600.00	72.00	528.00	3
Team race, pace	800.00	700.00		700.00	2
W. B. Futurity, trot	300.00	300.00		300.00	3
W. B. Futurity, pace	100.00	100.00		100.00	2
Totals	$ 15,100.00	$ 11,783.00	$ 3,464.50	$ 8,318.50	116

RUNNING RACES.

Derby 1¼ mile	$ 300.00	$ 300.00	$ 30.00	$ 270.00	6
7 furlong dash	150.00	150.00	30.00	120.00	6
6 furlong dash	150.00	150.00	20.00	130.00	4
6 furlong dash	150.00	150.00	35.00	115.00	7
6 furlong dash	150.00	150.00	30.00	120.00	6
5 furlong dash	150.00	150.00	25.00	125.00	5
5 furlong dash	150.00	150.00	40.00	110.00	8
Special 5 furlong dash	150.00	150.00		150.00	6
Special 5 furlong dash	150.00	150.00		150.00	5
Totals	$ 1,500.00	$ 1,500.00	$ 210.00	$ 1,290.00	53
Totals for harness races	15,100.00	11,783.00	3,464.50	8,318.50	116
Grand totals	$ 16,600.00	$ 13,283.00	$ 3,674.50	$ 9,608.50	169

Treasurer's Receipts:

Entry fees	$3,674.50
Suspensions	133.50
Total receipts Speed Department	$3,808.50

ITEMIZED STATEMENT, SHOWING COST OF WOMEN AND CHILDREN'S BUILDING, BUILT IN 1913 AND 1914, AND FOR WHICH THE THIRTY-FIFTH GENERAL ASSEMBLY MADE AN APPROPRIATION OF $75,000.00.

Board meeting to approve plans, locate building and authorize letting contract	$ 247.40
Advertising for bids	50.74
Executive committee meetings to let contracts and general supervision during construction	192.20
Engineer's fees locating building, measuring excavation and cement floors, etc.	172.00
Architect fees, 3 per cent of general contract	2,251.66
Excavating and grading site for building	2,156.45
General contract, J. E. Lovejoy	65,190.00
J. E. Lovejoy, general contract, extras	1,954.69
Plumbing contract, Van Dyke Plumbing and Heating Co.	3,480.00
Plumbing contract, extras, Van Dyke Plumbing and Heating Co.	269.10
Electric fixtures and wiring	672.28
Cement floors in basement and under porches	1,389.71
Screens for all doors and windows	975.00
Drain from building	77.75
Burlap covering for partition in art room	24.00
Lumber for partition in art room, kitchen equipment and tables	157.26
Carpenter work on partition in art room, kitchen equipment and tables	125.73
Signs for building, doors and departments	101.20
Sheet metal work, stove hoods and kitchen sinks	125.80
Door holders for all outside doors	21.00
Tinting walls in art and exhibit rooms	89.95
Awning for west doorway	14.17
Sculpture group "Mother and Child"	50.00
Meter rings and covers in kitchen and over cess pool	16.00
Iron railing in art room to keep public away from paintings	100.00
Furnishings for entire building, including chairs for two auditoriums	3,994.28
Total cost	$83,898.37

ITEMIZED STATEMENT, SHOWING COST OF COOLING OUT PADDOCK, BUILT IN 1914; DIMENSIONS, 60x138 FEET.

Expense committee and architect inspecting paddocks at Cleveland, Ohio, and Lexington, Kentucky	$ 235.05
Architect fees	249.36
Engineering services locating building	23.25
Advertising for bids	16.45
General contract	8,069.00
Plumbing contract	193.72
Curtains for sides	176.24
Lumber for curtain rollers	10.29
Drainage, connecting with downspouts	70.25
Grading, making fill	820.20
Numbering stalls	3.38
Total cost	$ 9,867.19

ITEMIZED STATEMENT, SHOWING COST OF ADDITION TO STREET CAR ENTRANCE, BUILT IN 1914; DIMENSIONS, 40x80 FEET.

Advertising for bids	$ 5.00
General contract	2,600.00
Cement flooring	441.70
Painting large sign	61.60
Painting roof	15.00
Labor on division fence	80.96
Total cost	$ 3,204.26

ITEMIZED STATEMENT, SHOWING COST OF SUBWAY UNDER RACE TRACK, BUILT IN 1914.

Architect fees	$ 188.34
Engineer's services	5.00
Advertising for bids	5.00
General contract	6,043.00
General contract, extras	101.15

Electrical wiring	28.83
Steel posts for south approach	22.70
Grading, back fill and lowering ends of approaches	225.90
Extra on east wall, south approach	38.00
Total cost	$ 6,657.92

ITEMIZED STATEMENT, SHOWING COST OF CATTLE BARN, BUILT IN 1914; DIMENSIONS, 60x120 FEET.

Architect's fees	$ 162.90
Advertising for bids	4.00
General contract	5,430.00
Numbering stalls	2.02
Filling	294.88
Total cost	$ 5,893.80

STATEMENT OF INSURANCE IN FORCE ON FAIR GROUNDS BUILDINGS AND DATE OF EXPIRATIONS.

	Fire Insurance	Tornado	Premiums	Expirations
General form on frame buildings	$ 57,200.00	$ 57,200.00	$ 2,073.50	1916
Brick horse barns	14,500.00	14,500.00	435.00	1915
Brick horse barns		10,000.00	40.00	1916
Brick cattle barn No. 2	3,000.00	3,000.00	90.00	1916
Brick cattle barn No. 1	3,000.00	3,000.00	90.00	1915
Transformer station and contents	2,000.00	1,000.00	54.00	1916
Women and children's building	15,000.00	15,000.00	300.00	1917
Agricultural building	10,000.00	10,000.00	296.00	1917
Administration building contents	3,000.00	2,000.00	85.00	1917
Administration building	17,000.00	13,000.00	490.00	1917
Stock pavilion	15,000.00	13,500.00	448.50	1917
Machinery hall		15,000.00	71.00	1917
Swine pavilion		15,000.00	60.00	1916
Grand stand		10,000.00	90.00	1917
Farm house	1,500.00	1,500.00	15.00	1916
Farm barn	500.00	500.00	5.00	1916
Brick dining halls	4,000.00	2,000.00	110.00	1915
Street car station		2,000.00	12.50	1916
Total insurance	$ 145,700.00	$ 188,200.00	$ 4,765.50	----

STATEMENT OF INSURANCE—Continued

	Fire	Tornado	Premiums
EXPIRATIONS.			
1915	$ 21,500.00	$ 19,500.00	$ 635.00
1916	64,200.00	90,200.00	2,350.00
1917	60,000.00	78,500.00	1,780.50
Totals	$ 145,700.00	$ 188,200.00	$ 4,765.50

The rate for the three-year period, for which all the insurance is written, is as follows:

Fire insurance on frame buildings	$30.00 per $1,000.00 insurance
Tornado insurance on frame buildings	6.25 per 1,000.00 insurance
Fire insurance on permanent buildings	25.00 per 1,000.00 insurance
Tornado insurance on permanent buildings	5.00 per 1,000.00 insurance

The tornado insurance on permanent buildings renewed during the past year has been written for $4 per $1,000.

The following statement sets out the amount expended for improvements on the Iowa State Fair Grounds during the past thirteen years from state appropriations and from the receipts of fair; also the amount paid in cash premiums during the same period:

Year	Purpose for which State Appropriation was made	Amount of State Appropriation for improvements	Amount expended from fair receipts for improvements	Total amount expended for improvements during past 13 years	Amount paid in cash premiums
1902	Stock pavilion	$ 37,000.00	$ 26,457.00	$ 63,457.00	$ 21,736.00
1903	----------	----------	17,855.00	17,855.00	23,813.00
1904	Agricultural building	47,000.00	12,640.00	59,640.00	24,691.00
1905	----------	----------	11,963.00	11,693.00	28,556.00
1906	----------	----------	30,035.00	30,035.00	31,703.00
1907	Swine barn	75,000.00	41,459.00	116,459.00	35,504.00
1908	----------	----------	53,663.00	53,663.00	38,744.00
1909	Grand stand	100,000.00	50,208.00	150,208.00	42,262.00
1910	----------	----------	24,360.00	24,360.00	49,717.00
1911	Machinery building	65,000.00	----------	----------	56,254.00
	Sanitary toilets	8,000.00	----------	----------	----------
	Land	5,000.00	31,775.00	109,775.00	----------
1912	Land	7,000.00	64,056.00	71,056.00	58,139.00
1913	Women and Children's building	28,531.00	22,579.00	51,110.00	61,069.00
1914	Women and Children's building	46,469.00	54,180.00	100,649.00	66,024.00
	Total 13 years	$ 419,000.00	$ 441,230.00	$ 859,960.00	$ 538,220.00

THE STATE'S INVESTMENT AND VALUE OF THE FAIR GROUNDS PLANT.

The present investment of the state of Iowa in the fair grounds property, including the original appropriation of $50,000 for the first frame buildings and the appropriations since 1902 for permanent buildings and additional ground, total $475,111.

The state fair grounds contain 283 1.3 acres, and was appraised in 1913 by a committee well acquainted with real estate values in and around Des Moines, without taking into consideration any improvements, at $375,070. The value of the buildings, personal property, etc., and as shown by the books of the department is $828,589. Adding to this the value of real estate, it gives the total value of the plant at $1,203,659.

By deducting the total investment of the state in the fair grounds plant from the present value, we have the surplus, or profit to the state, of $728,548.

This profit is largely due to the increased value of the real estate since the state acquired the title in 1885 and the many improvements added to the grounds in the past thirteen years from the profits of the fair.

CONDENSED FINANCIAL STATEMENT OF THE STATE DEPARTME

Showing Receipts and Disbursements of Iowa State Fair and Other Sources Repairs, etc., and Net Profit of

	Receipts							
	Cash balance beginning of year	From state fair	From state appropriation	From other sources	Total receipts for year	Grand total	Premiums paid	Other fair expenses
1896	$ 116.79	$ 36,622.10	$ 7,000.00	$ 6,710.22	$ 50,332.32	$ 50,449.11	$16,404.29	$ 15,351.06
1901	28,616.55	50,712.91	1,000.00	2,753.82	54,466.73	83,083.28	19,203.83	13,925.87
1902	34,244.93	63,084.71	38,000.00	3,037.06	104,121.77	138,366.70	21,736.31	20,073.34
1903	30,372.25	59,838.56	1,000.00	3,140.79	63,979.35	94,351.60	23,813.13	21,989.56
1904	28,963.11	66,100.36	48,000.00	2,622.03	116,722.39	145,685.50	24,691.68	28,485.42
1905	29,657,23	84,786.25	1,000.00	2,840.92	88,627.17	118,284.49	28,730.89	34.408.62
1906	39,976.34	110,929.85	1,000.00	3,717.16	115,647.01	155,623.35	31,703.94	40,315.60
1907	50,294.87	104,356.75	76,000.00	5,452.34	185,908.09	236,103.96	35,504.79	43,647.20
1908	35,227.90	138,764.66	1,000.00	3,262.95	143,027.61	178,355.51	38,744.56	55,848.65
1909	25,328.73	137,307.40	101,000.00	5,257.42	243,564.82	268,893.55	42,262.76	66,963.12
1910	4,985.25	157,259.77	1,000.00	14,658.30	171,918.07	176,903.32	49,717.50	80,513.68
1911	7,283.44	179,549.67	78,000.00	5,275.72	262,825.39	270,108.83	56,264.35	81,603.16
1912	18,036.99	185,701.21	8,000.00	14,579.82	208,281.03	226,318.02	58,139.15	85,829.74
1913	615.63	188,832.10	30,786.81	17,211.86	236,830.77	237,446.40	61,069.90	85,670.12
1914	18,505.82	188,644.66	51,268.19	32,799.93	272,712.78	291,218.60	66,024.85	104,411.33

NOTE.—In accordance with the recommendation of the efficiency engineers employed by the committee on retrenchment and reform, the custom of printing a list of all expense and premium warrants and payroll checks issued in the Year Book has been discontinued.

NT OF AGRICULTURE FOR YEARS OF 1896 AND 1901 TO 1914, INCLUSIVE.

and Expenditures, together with Amount Expended for Improvements, Fair for Each of the Years Named.

Disbursements							Profits of Fair		
Improvements and repairs	Maintenance of grounds and buildings	Disbursements other than for fair	Total for year	Cash on hand	Previous year's business or outstanding warrants	Grand total	Total receipts of fair	Total expenses of fair	Net profits
$ 7,471.95	------------	$14,019.88	$ 53,247.28	$ 152.84	--------	$ 53,400.12	$ 36,622.10	$ 31,807.35	$ 4,814.75
13,378.73	------------	2,313.44	48,821.87	34,244.93	$ 16.48	83,083.28	50,712.91	33,129.70	17,583.21
63,457.12	------------	2,608.69	107,875.46	30,372.25	118.99	138,366.70	63,084.71	41,809.65	21,275.06
17,855.77	------------	1,704.83	65,363.29	28,963.11	25.20	94,351.60	59,838.56	45,802.69	14,035.87
59,641.11	------------	3,195.43	116,013.64	29,657.23	14.63	145,685.50	66,100.36	53,177.10	12,823.26
11,963.09	------------	3,345.27	78,447.87	39,976.34	139.81	118,284.40	84,786.25	63,139.51	21,646.74
30,035.33	------------	3,385.87	105,440.74	50,394.87	112.26	155,623.35	110,929.85	72,459.39	38,470.46
16,459.05	------------	5,043.03	200,654.07	35,327.90	176.19	236,103.96	104,356.75	79,151.99	25,204.76
53,663.69	------------	4,975.50	153,231.98	25,328.73	381.39	178,355.51	138,764.66	94,593.21	44,171.45
150,208.58	------------	4,379.91	263,814.37	4,985.25	332.39	268,893.55	137,307.40	109,225.88	28,081.52
24,360.98	------------	14,740.26	169,332.42	7,283.44	287.46	176,903.32	157,259.77	130,231.18	27,028.59
109,755.04	------------	4,429.29	252,071.84	18,036.99	209.85	270,108.83	179,549.67	137,867.51	41,682.16
71,056.56	$6,575.51	4,101.43	225,702.39	615.63	563.84	226,318.02	185,701.21	143,968.89	41,732.32
51,110.85	7,313.67	13,776.04	218,940.58	18,505.82	253.50	237,446.40	188,832.10	146,740.02	42,092.08
100,649.13	7,564.86	11,599.70	290,249.89	968.73	689.41	291,218.60	188,644.66	170,436.18	18,208.48

The theory was advanced that a chronological list of warrants and checks issued did not give the legislature or public the information desired, and to use eighty or one hundred pages of the Year Book for this purpose was a needless expense to the state.

President: Gentlemen—This will complete our program for this morning and we will stand adjourned at this time until 1:30 o'clock this afternoon.

AFTERNOON SESSION.

Chairman: We will now complete our morning work by listening to an address by Mr. A. A. Burger, County Agent, Black Hawk county, Cedar Falls.

ADDRESS.

BY A. A. BERGER, COUNTY AGENT, CEDAR FALLS.

Mr. President and Gentlemen: I don't know what excuse shall be offered for my being on the program this afternoon. I was glad to be here and listen to the speeches this forenoon and the quite excellent report of our county, district and state fairs. One thing that impressed me in the talks this morning was the educational trend of the agricultural movement of the state of Iowa.

There was a time ten or fifteen years ago when it was a difficult proposition to get an audience in the state of Iowa at a farmers' institute, but that sentiment has been changed. You can notice it in the institute, the short courses, in the fairs being held in the state of Iowa, and I have found out in talking to members of the Dairy Commission, to the members of the Extension Department, and you can see it all through the state that there is a greater interest being taken along agricultural lines.

Now, I am here to talk to you people a little while about the live stock movement. I will first talk to you briefly about what we are trying to do in Black Hawk county, and in that way you will get an idea of what we are trying to do in various counties in the state of Iowa; and you will pardon me if I refer to what we have done, or attempted to do, in Black Hawk county. Some may imagine that it is our province to tell people how they should manage their farms, etc. It is not that at all. That is the least part of the county agricultural agent's duties. He is not there to tell the people any more than our college, any more than the extension department, any more than the experiment station are to tell people how absolutely to do things on the farm. The question is simply as to the extension of the extension department into the various counties. Now, you know, yourselves—you are all thinking men—it is a pretty hard proposition to get hold of some people in the county, and the only way you have of getting hold of them is by going to see those people privately. Now, our people in Black Hawk county raised $1,500 to do that work. It was part of my work to raise that subscription list of some 300 or 400 farmers of Iowa, so I went out on the farms of Black Hawk county, for I was to work for it in Black Hawk as well as in many of the other counties in the northern part of the state of Iowa. That same winter we organized one short course. We organized and held two farmers' institutes and assisted in the organization of another short course in the county. We organized the first Holstein breeders' association that was organized in the state of Iowa. The next spring we started out and organized two institutes and held a one day's session at one place and at the other a three days' session, an institute that had previous to that time been started in Black Hawk county. The first year after that we started out to put in some experimental tests with these with corn, alfalfa and lime. We shipped in something like three car loads of lime, making some twenty-five or thirty experiments. Since that time we have shipped in twenty-five or thirty car loads of lime. We have continued the lime, the alfalfa and the corn experiments. I am unable to say how many experiments we had in the line of corn, and I don't know how many corn experiments were distributed to other lines. We conducted in the first year, in conjunction with the agricultural association and each of the experiment associations, something like seventy-five to one hundred tests with lime, alfalfa and corn. The second year we started out on two principal lines, one of alfalfa and the other of corn. We started out in coöperation with the Agricultural College. We arranged night meetings in the county. It cost the extension department something like $1,000 to put that campaign on; it cost the association something like $150. The meetings were arranged so that no farmer was more than three miles from any meeting place. Earlier in the spring, Leavitt & Johnson, of the National Bank of Waterloo, in coöperation with the Crop Improvement Association, put on the corn contest. They offered $1,300 in cash premiums in that contest and paid other premiums that amounted to more than the cash premiums. We started in the spring sending out notices. Later on we held a meeting, invited in two or three prominent farmers from each township, and we held meetings. We arranged meetings in each of the townships and as there are sixteen or eighteen townships in Black Hawk county there were quite a number of these meetings. The result was that on the 15th of May, when these entries were closed, we had 572 contestants, out of about one-fourth of the farmers of Black Hawk county. Later on we organized seven boys and girls corn clubs and we worked these corn clubs throughout the district. Starting in the spring, they made germination tests of all the corn grown on their father's farm. Later on they got out in the field and studied the cultivation of corn. Still later on they made a study of the pests affecting corn. Many of the boys and girls made collections of the common injurious insects, such as the corn worm, and other pests, in the schools where these clubs were held. Later, in the fall, they studied methods of selecting their seed corn and caring for the same. When the contest was completed each one of these boys and girls was required to submit two essays, and that, together with their work in the field and in the club, was the basis for writing of their work through the entire year.

I forgot to say a moment ago that $1,000 of the $1,300 was given for each of the grade tests, and we allowed men and women and boys and girls, without restrictions as to expense, to enter into that test. In the other test, for $300, the boys and girls only were allowed to compete. The final results were that seventy-eight out of the total number of contestants finished up. Later on, in the fall, we had a corn show at Waterloo, and each one of the contestants was required to exhibit thirty ears of corn. We made arrangements with the management of the cattle show at Waterloo to provide each one of the contestants with a free ticket for the entire week at their show. The result was that we had in that show about 330 contestants, each of whom had twenty-five or thirty ears of samples they had saved up, filling a space twenty-five or thirty feet long, by twelve wide, with corn on each side of the porch and hung overhead on seed corn hangers. Now, we eliminated a good many of the contestants by the scoring, and after they were eliminated by these scores we had seventy-eight left. What was the result? We had 572 contestants, in round numbers, representing about one-fourth of the farmers of Black Hawk county. We had about 100,000 acres of corn in Black Hawk county; that represented one acre from each one of these farmers, making a total of something like 25,000 acres of corn that was represented at the corn show. I say represented because the acre he selected was the best acre he could get on the farm, and the 330 samples would represent something like 14,000 acres of corn. And in the final elimination of the contestants that represented something like 3,500 acres of corn in Black Hawk county on which we got the exact weight in the crib and the amount of shelled corn, and we absolutely know the shelling per cent. We found out more than that. In the organization of the Crop Improvement Association of Black Hawk county we started out to find a standard variety of corn, and thought we had. When we got through, finally, we found that the variety of corn we selected, and had been recommending, yielded six bushels more per acre, on the average, than the next competing variety; and that represented a good deal. To increase the yield in Black Hawk county, only one bushel per acre would mean 100,000 bushels; it would mean, in round numbers, $50,000 net increase in the corn crop in that county alone. Now, I am sure the corn show and the tests we have made in Black Hawk county would increase the yield. In fact, testing out every ear of the seed corn, not to say anything about the better variety of corn acquired, not to say anything about crop rotation, in any county in the state of Iowa, will more than increase the corn production of one bushel per acre.

Now, I have included many things along the line of experimental work, but there are many things I have not mentioned. For instance, the growing of alfalfa, the distribution of clover seed, and some of the other experiments that have been conducted, but I thought perhaps it would be better to give you a brief idea of what we attempted to do, rather than to give you my own idea of the crop association work. I do not know how generally the people of Iowa look with favor upon this proposition, and I do not know how many of you people here this afternoon are in favor of this proposition, but, I want to say to you, it is one of the greatest agricultural movements that has occurred since our Civil war, and it goes hand in hand with the extension department, the experiment station and the Agricultural College, and, whether the people of the state of Iowa, or you people here, are in favor of it or not, the crop association work in the state of Iowa will be continued as it is continued in the other states. In some respects, I am ashamed of the state of Iowa. I did not know, until I learned through the reports of the Greater Iowa Association, what some of the greater possibilities of the state were, and I did not know, until I came down here this morning, that thirty or thirty-five per cent of the people of our colleges are leaving the state to go into other work. I want to say to you that along this very line of agricultural improvement, Illinois, Minnesota and Missouri, and the states around Iowa, are bidding far better than Iowa for the best men that we have today for that kind of work. In the state of Illinois they are taking away from the university and the Agricultural College the very best men we have; they are coming to Iowa and taking the boys of Iowa and putting them ahead in their institutions in those states. As I have listened to the talks this morning, and, as I have thought a great many times of the great things that Iowa might do, I have wondered what the state was going to do in an educational way. Now, it is up to us to get into the game. I have thought many times the reason we did not take advantage of these things which the other states have taken advantage of is that we have made money too easily in the state of Iowa.

Another thing we are lacking in is advertising. Now, I do not know any better way than to take the information we have at the colleges and experiment stations to the Iowa farmers. The man who needs it is the man who does not get to attend the fairs and institutes. He is the man who needs somebody to step right onto his own farm and take that work up with him. I think that is one of the ways of getting at the man who stays at home on his own farm. To give you an illustration, on one of the farms in Black Hawk county the owner had experimented with four different varieties of corn. These were put in the same field, side by side. One of the neighbors came in and said, "Peterson, how did my corn do?" I guess Peterson had asked him about his corn, and he said, "How did my corn do?" He said it was not worth a damn, and Peterson said it is not worth cussing about. He said, "I don't believe in this testing of corn; it will do no good." He says, "do you know how I test corn?" "I go out in the field and husk some corn and throw it inside of a box and the next spring plant it and cultivate it just like anybody else does," and, he says, "I depend on the Lord to do the rest.' Peterson looked at him and said, "If I had that good a standing with the Lord, I would not select my corn, either." The average local corn of Black Hawk county yielded about eight bushels more per acre. Now, I want to give you one other example of that, then I am through. You people are all acquainted with Professor Bowman. Last year he noticed one of the varieties of corn we had there, and he said to me, "Where can I get some of that variety?" I said, "I do not know. Practically all of the seed we have now is gone." He went to the man who had originated this variety of corn, as he understood he had some seed corn, but he told him it was all gone, and he did not succeed in getting any there. So Professor Bowman went into the corn crib and picked out twenty-five bushels and tested it, and, out of that twenty-five bushels, threw away ten bushels, so the seed corn cost him about $10 per bushel. Bowman went out in the field, picking the best corn in the ear and planted two rows to the plat, keeping back the biggest part of that ear. He planted right along side of the corn grown on the farm, and that had been grown for a number of years thereon. While he was out there a man came along and saw him planting that stuff by hand, and found out how he had secured the corn, and he said that was peculiar farming. That made Bowman a little sore, but he was game, and he knows how to keep at it, and he kept at it, and this fall this corn he planted along side of the old-fashioned corn he had been growing made twenty bushels to the acre more than the corn he had been growing on the farm; and I was there when the corn contest was completed and the corn was weighed, and that corn weighed across the scales 109 bushels to the acre, and out of that yield he got 63%, or about seventy bushels, of his good seed, and, a little later on, when the contest was completed, that corn won $200 as being the best acre of corn in Black Hawk county, and the farmers who had accused him of peculiar farming began to sit up and take notice. That is the way the county agent has to take hold of the people of the county, and the only way you can get hold of a big per cent of the people of almost every locality in the state of Iowa is by experiments right on their own farm, or in the neighborhood where they can see results.

Now, the Crop Improvement Association is a great thing. It is right along the line of the advertising features of the state of Iowa, and a good thing for your fairs and your farm institutes in general, not to say anything of it as a factor of the dissemination of agricultural knowledge first hand to the people living in the county, and you people ought to take hold of that work and help it grow in this state, at least, so Iowa would not have to take second rank. When I heard that some counties had lost out, and that our own county had only got through by a small majority, I thought improvement was made by those living in the city instead of by those living in the country, I wondered if it was not time for the Iowa people to wake up to some of the possibilities. You know what Iowa is. I think that all it needs is development, and I think this is one of the things that will help develop it.

President: The next paper we have is one I am sure you will all be interested in. Mr. Corey explained to you this morning in regard to this boy, how he came, and the bringing of these boys down to the camp and how we required each boy to go home and write a paper on what he saw and learned at the State Fair. Then, of course, we have judged those papers; and the management has paid the expenses of this boy down here to read this paper. Now we will have the First Prize Essay, "What I Saw and Learned at the 1914 Iowa State Fair," by Mr. Howard Evans of Webster City.

"WHAT I SAW AND LEARNED AT THE IOWA STATE FAIR AND EXPOSITION."

BY HOWARD EVANS, WEBSTER CITY, IOWA.

Words cannot express my delight when I was informed that my essay on "The Ideal Farm" had been awarded first prize in Hamilton county, and that I would be a member of the boys' camp at the Iowa State Fair of 1914. I had never visited the fair, which everyone reported a wonderful institution. On August 24th I was enrolled with ninety-eight boys from every part of the state.

The first day we were given an opportunity to learn as much as possible about the fair grounds, and I saw a great deal more than I could remember. However, I learned to find the various buildings and exhibits, which were many and varied. Of great interest to me was the building of the Iowa State College, containing exhibits of the agricultural and engineering departments. Models of the buildings and many other interesting devices were shown. Wireless messages were also sent from there to the city. All kinds of grains, grasses and weeds were on exhibition; also models of soil types and the best rotations and fertilizers. Lectures and motion pictures were given daily.

The Agricultural Hall contained many attractive county and farm exhibits, vegetables and fruits. In Floral Hall were a great many beautiful flowers and the Exposition Building contained many attractive exhibits. The Administration Building was used for the officers of the fair and for a reading and rest room. One of the most popular and handsome buildings on the grounds was the Women and Children's Building, which contained an interesting art exhibit, model school room, manual training and domestic science rooms, a children's playground, the baby health contest, and many other interesting features. In the Boys' and Girls' Club Building I saw manual training and domestic science exhibits from schools.

Everyone was interested in the mammoth swine building and judging pavilion. There were many exhibitors of the various breeds. I was especially interested in the exhibits of pure bred horses and ponies, and the barns full of all breeds of beef and dairy cattle. The sheep also attracted attention and the poultry building was crowded with chickens, ducks, geese, etc. In this building the Iowa State College put on a very interesting and educational exhibit pertaining to the killing and picking of fowls.

The new cattle barn and paddock were greatly appreciated.

Our camp life was an important part of the trip. In addition to learning how to camp, I became a friend of some of the best fellows in the state, and was under guidance of good, friendly men. We were allowed a good night's rest and arose and went to meals at a scheduled time. We were privileged to hear talks by Governor Clarke, Rev. Hanson, Auditor Bleakley, Mr. Parsons, Rev. Idleman, Uncle Asa Turner, and Mr. Goodrich. There were also morning prayers by the leaders.

In the mornings we played indoor baseball and came to know each other better in these games. We were used as ushers at the ampitheater and stock pavilion. Here we saw the various attractions, the wonderful Lincoln Beachey, auto polo, horse and auto races, the Panama canal opening, stock judging, and the million dollar live stock parade, We were also permitted to visit the Capitol, Historical Building, and the Y. M. C. A.

I am sure that we all learned a great deal during the week we were at the fair. I learned many of the good points of animals in the boy's judging contest and in visiting the many barns filled with stock. I learned much about the merits of the gas engines and tractors and other farm machinery. I learned about the different kinds of silos, milking machines, etc. I learned how stock was judged, how an aeroplane flies, how thread is wound, how wireless messages are sent, how the immense crowds at the fair are handled, and, in fact, I cannot begin to tell the many things of interest I learned.

I might say that I was very much interested in the exhibits of the Iowa mines and quarries, the State Board of Health, State Food and Dairy Commission, parcels post exhibit and the highway commission.

I am sure that a crowd of boys never gathered at a camp with a better purpose, to have as much fun, and make the most of their opportunities, than did the members of the 1914 Iowa State Fair Boys' Camp. I am sure boys never enjoyed the company of each other, and of Mr. Hanson and his leaders, more than I did. I believe we were all benefited in some way and were glad to have been a member of the camp. We will all try to meet at the fair of 1916.

President: We will now listen to the report of the Director of the Iowa Weather and Crop Bureau, Dr. Geo. M. Chappel.

FINAL CROP REPORT FOR THE STATE.

DR. GEO. M. CHAPPEL, DIRECTOR IOWA WEATHER AND CROP SERVICE.

Gentlemen: This is only a very brief summary of a very extensive report on crop yields, prices and acreage for this year.

Following is a summary of reports from crop correspondents of the Iowa Weather and Crop Service, showing the acreage, average yield per acre and total yields of staple soil products, and the average price at the nearest station, December 1, 1914:

CORN.—As in 1913, drouth reduced the yield in the southern counties, but timely and copious showers over the northern districts more than made up the loss, and the state produced twenty-one million bushels more than it did last year. The average yield per acre was thirty-nine bushels, and the total yield, 363,689,600 bushels. The average price at the nearest station was 55 cents, making the total value of the crop $200,029,280. The weather during the latter half of October, and all of November, was ideal for harvesting, and the quality of crop was never better.

Oats.—The area harvested was 5,154,200 acres; average yield, thirty-four bushels per acre; total yield, 172,696,000 bushels; aggregate value, at 34 cents per bushel, $70,805,360. Last year the average yield was 34.2 bushels per acre; total yield, 164,851,000; aggregate value, at 34 cents per bushel, $56,049,340.

Spring Wheat.—Area harvested, 261,025 acres; average yield, fourteen bushels per acre; total yield, 3,691,470 bushels; price, per bushel, 94 cents; total value, $3,469,981.

Winter Wheat.—Area harvested, 538,410 acres; average yield per acre, twenty-two bushels; total yield, 12,038,201 bushels; average price, 97 cents per bushel; total value, $11,677,063. The total yield of all wheat is 15,729,680 bushels, as compared with 16,348,807 bushels last year; but the value of this year's crop exceeds that of 1913 by $2,641,223.

Barley.—Average per acre, twenty-six bushels; total yield, 11,423,310 bushels; average price, 56 cents; total value, $5,397,053.

Rye.—Average yield, nineteen bushels per acre; total crop, 1,369,260 bushels; farm price, 77 cents; total value, $1,054,320.

Flax Seed.—Average per acre, eleven bushels; total product, 152,280 bushels; total value, at $1.21 per bushel, $184,258.

Potatoes.—Average yield per acre, eighty-seven bushels; total yield, $9,540,200 bushels; total value, at 87 cents per bushel, $5,533,316.

Hay (Tame).—Average yield, 1.4 tons; total yield, 4,234,370 tons; average price, $10.78; total value, $45,646,508.

Hay (Wild).—Average yield, 1.3 tons; total yield, 860,280 tons; average price, $8.28 per ton; total value, $7,123,188.

Alfalfa.—Area, 88,070 acres; average yield, 3.6 tons per acre; total yield, 319,853 tons; average price, $12.50 per ton; total value, $3,998,162.

TABULATED CROP SUMMARY.

	Acreage	Average yield per acre	Average price	Total yield	Total value
Corn	9,324,300	39	$ 0.55	363,689,600 bu.	$200,029,280
Oats	5,154,200	34	0.41	172,696,000 bu.	70,805,360
Spring wheat	261,025	14	0.94	3,691,470 bu.	3,469,981
Winter wheat	538,410	22	0.97	12,038,210 bu.	11,677,063
Barley	437,400	26	0.56	11,423,310 bu.	5,397,053
Rye	73,150	19	0.77	1,369,260 bu.	1,054,320
Flax seed	14,440	11	1.21	152,280 bu.	184,258
Potatoes	110,205	87	.58	9,540,200 bu.	5,533,316
Hay (tame)	2,923,250	1.4	10.78	4,234.370 T.	45,646,508
Hay (wild)	684,070	1.3	8.28	860,280 T.	7,123,118
Alfalfa	88,070	3.6	12.50	319,853 T.	3,998,162
Pastures and grazing				Estimated	84,000,000
Ensilage				Estimated	3,750,000
Timothy seed				Estimated	2,600,000
Clover seed				Estimated	500,000
Sweet corn				Estimated	525,000
Pop corn				Estimated	500,000
Fruit crop				Estimated	5,000,000
Garden truck				Estimated	5,000,000
Miscellaneous crops				Estimated	9,000,000
Total value					$ 465,793,419

The value of all soil products for 1913 was $438,157,440

President: Is the Committee on Resolutions ready to report?

Mr. Palm, Chairman: Mr. Chairman—We have had a dickens of a time getting ready; I did not think we would make it at all, and now I have got nothing but some scraps of paper, but maybe we can make out something. It is too bad to have such a little time and can't find each other.

REPORT OF COMMITTEEE ON RESOLUTIONS.

WHEREAS, The year 1914 was one of great prosperity to the agicultural and producing interests of Iowa, and

WHEREAS, The farmers of Iowa have labored diligently and with an ever increasing intelligence to promote a higher order of agricultural prosperity and higher ideals of farm, home and civic life, and

WHEREAS, The county, district and state fairs are a visible, tangible and proper expression of the better purposes and higher aims of agriculture in Iowa, and

WHEREAS, Iowa is today the ideal agricultural state in the Union, so classified and so regarded by all students of farm values and agricultural wealth, with a topography carrying the maximum of tillable land and the minimum of waste land; located in the heart of the great corn area of the North American continent; with lands the most fertile, climate the most equable, and the conditions the most favorable for the maintenance of a prosperous, busy and contented people, and

WHEREAS, The great state of Iowa, at its Sixtieth Annual Exposition at Des Moines last August, gave visible and gratifying evidence of Iowa's unchallenged agricultural superiority, and

WHEREAS, The people of Iowa are proud of its rank and its far-reaching influence among the fairs of the great producing West, and

WHEREAS, No other agency so gathers together groups and visualizes Iowa's supremacy as an agricultural area as does the state fair, therefore, be it

Resolved, That, while we have an especial pride in the great Iowa State Fair and its exposition of the general wealth of Iowa's agricultural, horticultural, farm and manufacturing industries, we feel that much of its success is due to, and arises from, the wide spirit of agricultural interest and enthusiasm created by the county and local fairs of the state. These local fairs have done, and are doing, the pioneer work in arousing and stimulating agricultural interest throughout every locality in Iowa. They organize its activities at the base. They encourage and promote that large and important class of beginners in the betterment of Iowa production. They work hand in hand with the average producer. They discover and encourage the progressive young farmers and producers of their respective communities. They work with, and have to do with, the average producers which the state fair cannot reach, and who, in turn, cannot reach the state fair. They reach and encourage the fellow whose financial legs are too short to reach the fodder if placed too high in the rack, and they want, and will demand, at the hands of the legislature of Iowa, a larger and more substantial recognition of their needs. And we would, therefore, urge this meeting to coöperate with the county and district fairs in initiating a movement and setting on foot activities energetic, capable and persistent, to bring to the attention of the legislature of Iowa, soon to convene at this capitol, the needs and the demands of the local district and county fairs of Iowa for a more liberal allowance at the hands of the state.

Resolved, That we believe it to be in the interests of every owner of Iowa farms and Iowa lands that the state fair should be maintained at its high altitude of prosperity and continue to maintain its rank as first among the great agricultural fairs of the Middle West. Every acre of Iowa, and every tiller of every acre, is interested in the success of the Iowa State Fair. It is a tangible and visible asset to every farm and homestead in the state. Nothing so powerfully visualizes the resources of Iowa to the people of the entire country as does the exhibition of its resources gathered at the state fair and brought to the attention of the hundreds and thousands of visitors from other and adjacent states who come to our fair as an annual and agreeable pilgrimage to see the greatest exposition of agricultural wealth and prosperity assembled in the Mississippi valley. There is no exaggeration in this claim, no self-glorification, no excess of statement, but the simple statement of the naked truth, known and read of all men.

Resolved, That we, as citizens of Iowa, are proud of our great state fair; proud of its careful, progressive and consistent management; proud of its competent administration; and we hereby, as representatives of the state's leading industry, its agricultural and all associated and kindred industries, desire to express our gratification at the success of our state fair so uniformly maintained, and, be it further

Resolved, That we renew our confidence in the management of its business and its affairs, and that we are especially gratified that no suspicion has ever cast a shadow upon its business history, no neglect or irregularity has ever been charged to its officers, no incompetency or partiality alleged or sustained, against its management, and it is the hope of this meeting of representative agricultural communities, who, in their narrower local sphere, seek to encourage and maintain a kindred interest, that they may always look up to the Iowa State Fair as a model of excellence in its business management and in all that goes to make up a model exposition of Iowa's agricultural interests. Respectfully submitted, John W. Palm, C. W. Hoffman, T. W. Purcell, committee.

On motion, duly seconded, the report of the committee was adopted.

The Committee on Credentials presented the following report, and on motion, duly seconded, the report was adopted:

REPORT OF COMMITTEE ON CREDENTIALS.

We, your committee on credentials, beg leave to report that we have examined the credentials on file and find the following delegates entitled to take part and vote in this convention, the number of delegates entitled to the privileges of the convention being one hundred and three. Respectfully submitted, H. L. Pike, W. H. Shipman, J. W. Bennett, committee.

DELEGATES ENTITLED TO VOTE IN THE STATE AGRICULTURAL CONVENTION, DES MOINES, DECEMBER 9, 1914.

FARMERS' INSTITUTES.

Allamakee County	Chas. L. Child, Waukon
Benton County	H. C. White
Benton County	David Stockney, Vinton
Bremer County	J. W. Bennett, Waverly
Buena Vista County	Geo. M. Allee, Newell
Buena Vista County	C. A. Fulton, Storm Lake
Calhoun County	A. W. Eshbaugh, Rockwell City
Cerro Gordo County	B. P. Kirk, Mason City
Cherokee County	J. H. Ament, Cherokee
Dallas County	Garfield Trindle, Van Meter
Decatur County	A. E. Cotterill, Leon
Franklin County	Earl Ferris, Hampton
Hancock County	Thomas Peterson, Britt
Henry County	W. B. Seeley, Mr. Pleasant
Iowa County	F. G. Turner, North English
Marshall County	G. S. Binford, Liscomb
Mills County	Glenn Summers, Malvern
Monona County	C. N. Whiting, Whiting
O'Brien County	Geo. J. Smith, Paullina
Pocahontas County	F. C. Gilchrist, Laurens
Polk County	Geo. M. Grinstead, Mitchellville
Poweshiek County	J. J. Axtell, Deep River
Ringgold County	Grant Stahl, Diagonal
Scott County	Chas. W. Lau, Davenport
Shelby County	L. H. Pickard, Harlan
Sioux County	G. L. Venard, Hawarden
Van Buren County	Geo. V. Leffler, Stockport
Warren County	J. F. Henry, Indianola
Woodbury County	H. H. Onstott, Bronson

SHORT COURSES DRAWING STATE AID.

Madison County	T. J. Hudson, Winterset
Winnebago County	F. J. Brooker, Buffalo Center
Winnebago County	John L. Wheeler, Forest City

COUNTY AND DISTRICT FAIRS.

Dairy Cattle Congress, Waterloo	H. G. Van Pelt, Waterloo
Cedar Valley District Fair, Cedar Falls	J. L. Bailey, Cedar Falls
Bremer County Fair Association	J. Q. Lauer, Waverly
Buena Vista County Agricultural Society	W. J. Sievers, Alta
Calhoun County Fair Association	C. G. Kaskey, Manson
Carroll Fair & Driving Park Association	Peter Stephany, Carroll
Tipton Fair Association	C. F. Simmermaker, Tipton
North Iowa Fair	H. S. Stanbery, Mason City
Clinton County Agricultural Society	G. H. Christenson, DeWitt
Davis County Agricultural Society	E. H. Games, Bloomfield
Guthrie County Agricultural Society	F. M. Hopkins, Guthrie Center
Hancock County Agricultural Society	R. L. McMillan, Britt
Harrison County Agricultural Society	A. B. Hasbrook, Missouri Valley
Henry County Agricultural Society	J. W. Palm, Mt. Pleasant
Winfield Fair Association	Theo. Russell, Winfield
Iowa County Agricultural Society	J. A. Waddell, Marengo
Victor District Agricultural Society	John C. Hinrichs, Victor
Williamsburg Pavilion & Fair Association,	H. A. Halverson, Williamsburg
Jackson County Agricultural Society	E. A. Phillips, Maquoketa
Jasper County Agricultural Society	F. E. Meredith, Newton
Johnson County Agricultural Society	Edwin T. Davis, Iowa City
What Cheer District Agricultural Society	Hazel Pim, What Cheer
Lee County Agricultural Society	Chris Haffner, Donnellson
Marion Inter-State Fair Association	E. R. Michel, Marion
Lyon County Fair & Agricultural Association	Chas. W. Bradley, Rock Rapids
New Sharon District Agricultural Society	J. C. Heitsman, New Sharon
Lake Prairie District Agricultural Society	Charles Porter, Pella
Marshall County Fair Association	G. F. Stansberry, Gilman
Mills County Agricultural Society	G. H. White, Malvern
Monona County Fair Association	N. W. McBeth, Whiting
Union District Agricultural Society	C. G. Brown, West Liberty
Clarinda Fair Association	J. C. Beckner, Clarinda
Shenandoah Fair Association	Frank Keenan, Shenandoah
Big Four District Fair Association (Fonda)	Frank Card, Fonda
Grinnell Fair Association	J. A. Bangham, Grinnell
Poweshiek County Central Agricultural Society	James Nowak, Malcom
Sac County Agricultural Society	L. E. Irwin, Sac City
Central Iowa Fair Association (Ames)	E. H. Graves, Ames
Tama County Fair Association	E. Mericle, Toledo
Eldon Big Four Fair Association	D. A. Jay, Eldon
Warren County Fair Association	Joe McCoy, Indianola
Webster County Racing & Stock Show Association	A. G. Rigby, Independence
Forest City Park and Fair Association	M. C. Wheeler, Forest City
Winneshiek County Agricultural Society	H. J. Green, Decorah
Inter-State Live Stock Fair Association	Joe Morton, Sioux City
Wright County Agricultural Society	Ed. Hood, Clarion

COUNTIES IN WHICH NO FAIRS WERE REPORTED.

Clarke County	John Ledgerwood, Osceola
Dallas County	O. L. Gray, Dallas County
Decatur County	C. W. Hoffman, Leon
Des Moines County	J. F. Deems, Burlington
Franklin County	T. W. Purcell, Hampton
Lucas County	D. A. McMains, Derby
Madison County	W. H. Maxwell, Winterset
Polk County	Adam Stirling, Des Moines
Ringgold County	J. F. Wall, Mt. Ayr
Union County	W. W. Morrow, Afton

STATE BOARD OF AGRICULTURE.

EX OFFICIO MEMBERS.

State Veterinarian	Dr. J. I. Gibson, Des Moines
State Dairy and Food Commissioner	W. B. Barney, Des Moines

OFFICERS.

President	C. E. Cameron, Alta
Vice President	O. A. Olson, Forest City
Secretary	A. R. Corey, Des Moines

DISTRICT MEMBERS.

First District	C. H. Tribby, Mt. Pleasant
Second District	C. W. Phillips, Maquoketa
Third District	E. M. Reeves, Waverly
Fourth District	E. J. Curtin, Decorah
Fifth District	Cyrus A. Tow, Norway
Sixth District	T. C. Legoe, What Cheer
Seventh District	C. F. Curtiss, Ames
Eighth District	F. E. Sheldon, Mt. Ayr
Ninth District	J. F. Summers, Malvern
Tenth District	J. P. Mullen, Fonda
Eleventh District	H. L. Pike, Whiting

Next in order being the election of officers of the state board of agriculture, Vice President Olson took the chair and called for nominations for president.

Mr. Morrow of Union county, nominated Mr. C. E. Cameron to succeed himself as president. Nomination seconded by Mr. Palm of Henry county. Mr. Hoffman of Decatur county, moved that if there were no further nominations that the rules be suspended and the secretary instructed to cast the entire vote of the convention for Mr. Cameron. The motion was seconded and carried and the secretary announced that he so cast the one hundred and three votes of the convention. Mr. Cameron was declared duly elected president of the state board of agriculture for the ensuing year.

Mr. Cameron again took the chair and called for nominations for vice president. Mr. Ferris of Franklin county nominated Mr. O. A. Olson to succeed himself, which nomination was seconded by Mr. Kaskey of Calhoun county. Mr. Purcell of Franklin county moved if there were no further nominations that the rules be suspended and the secretary instructed to cast the entire vote of the convention for Mr. Olson. The motion carried and the secretary announced that he so cast the one hundred and three votes of the convention. Mr. Olson was declared duly elected vice president of the state board of agriculture for the ensuing year.

Nominations for members of the state board of agriculture from the even numbered congressional districts were next in order. The president called for nominations for member from the second district. Mr. Morton of Woodbury county, nominated Mr. C. W. Phillips of Jackson county, to succeed himself. Nomination seconded by Mr. Kaskey of Calhoun county.

Mr. Brown of Muscatine county nominated Mr. J. I. Nichols of Muscatine county. Nomination seconded by Mr. Simmermaker of Cedar county.

Mr. Havner of Iowa, nominated Mr. Fred McCulloch of Iowa county. Nomination seconded by Mr. Turner of Iowa county.

Mr. Croxen of Muscatine county, moved that the first ballot be an informal ballot. Mr. Hoffman of Decatur county moved as a substitute that the convention proceed to a formal ballot. After some discussion Mr. Purcell of Franklin county, called for the previous question and the substitute motion for a formal ballot prevailed.

President Cameron appointed as tellers Mr. Purcell, Mr. Hoffman and Mr. Bradley. Ballots were cast and counted by the tellers, the count being as follows: Philips 59, Nichols 23, McCulloch 21. Mr. Phillips having received a majority of the votes cast, was declared duly elected member of the board of agriculture from the second district for the ensuing two years.

For member of the board from the fourth district Mr. Purcell of Franklin county, nominated Mr. E. J. Curtin to succeed himself. Mr. Morton of Woodbury county, seconded the nomination and moved if there were no further nominations that the rules be suspended and the secretary be instructed to cast the entire vote of the convention for Mr. Curtin. Motion prevailed. The secretary announced that he had so cast the one hundred and three votes of the convention and Mr. Curtin was declared elected member of the board of agriculture from the fourth district for the ensuing two years.

Nominations for member of the board from the sixth district were next in order and Mr. Leach of Davis county, nominated Mr. T. C. Legoe to succeed himself. Nomination was seconded by Simmermaker of Cedar county, and Mr. H. R. Baker of Wapello county. Mr. Leach moved if there were no further nominations that the rules be suspended and the secretary instructed to cast the entire vote of the convention for Mr. Legoe. Motion carried. The secretary announced that the one hundred and three votes of the convention had been so cast and Mr. Legoe was declared duly elected member of the board of agriculture from the sixth district for the ensuing two years.

Nominations for member of the board from the eighth district were next called for and Mr. Stahl of Ringgold county, placed in nomination Mr. F. E. Sheldon to succeed himself. Mr. Hoffman of Decatur county seconded the nomination and moved if there were no further nominations that the rules be suspended and the secretary instructed to cast the entire vote of the convention for Mr. Sheldon. Motion carried. The secretary announced that he had so cast the one hundred and three votes of the convention and Mr. Sheldon was declared duly elected member of the board from the eighth district for the ensuing two years.

For member of the board from the tenth district Mr. Gilchrist of Pocahontas county nominated Mr. J. P. Mullen to succeed himself. The nomination was seconded by Mr. Kaskey of Calhoun county, who moved if there were no further nominations that the rules be suspended and the secretary instructed to cast the entire vote of the convention for Mr. Mullen. The motion carried and the secretary announced that the one hundred and three votes of the convention had been so cast, and Mr. Mullen was declared duly elected member of the board from the tenth district for the ensuing two years.

Mr. Purcell of Franklin county, moved if there was no further business that the convention adjourn. Motion carried.

PART III

Proceedings of the Seventh Annual Meeting of the Iowa Association of County and District Fair Managers, December 8th, 1914

The meeting was called to order by President H. C. Leach of Bloomfield, Iowa.

Mr. H. C. Leach, Chairman: Gentlemen: It is now time for our meeting to come to order. I take great pleasure in calling together the seventh annual meeting of the Association of County and District Fair Managers of Iowa. I have been in attendance at the last six of them and have seen them growing in interest and numbers. All of this we are glad to see. We had a good meeting last year, and we hope to have a good meeting this afternoon. We have a good program, and I wish to suggest that after each party delivers his address or reads his paper, it will be open for discussion and in the discussion each party taking part therein be as brief as possible, talk to the point and remember when you arise to give your name and address in order that our reporters may get your remarks duly credited.

Before beginning our regular printed program Prof. L. H. Pammel of Ames will make us a short address on agriculture.

SOME CORN DISEASES.

PROF. L. H. PAMMEL, AMES.

Prof. Pammel: Mr. President and Gentlemen: I don't know if I invited myself to speak here. I have a little subject in which I know that you are all interested, and that is the production of the greatest corn crops possible in the state.

Now, I am not a corn specialist, but I believe you will be interested in the presence all over the state of a new disease, at least this year, which has cut our corn crop very seriously in various parts of the state. Not far from Ames it cut the corn crop about 25%. The purpose of my coming here is to call your attention to the fact of this disease and to get you to co-operate with us at Ames by sending us the material and let us determine more about the disease so we can tell you more intelligently what the trouble is and how it is to be handled. The symptoms are these: That the roots are entirely decomposed and usually pinkish in color. That is one disease. Then there is another disease that affects the stalk. Just close to the joint it breaks off. Now, we found that in a great many cases where the stalks are on the ground in this way, that the ears are of very poor quality. There is another disease, and that affects the corn, the ear, the ear becoming moldy. There is a great deal of that trouble in a good many parts of the state. The University of Illinois has estimated that this mold on the ears damaged their corn crop to the extent of seven or eight million dollars annually. Now, I am sure if you would go over the state you would find places where this corn crop is not over twenty-five bushels to the acre, and in many cases it is not that much. Now, you can easily double that yield, or could have doubled that yield provided more care was taken in the rotation of crops. I was out on the Missouri river bottoms about a month or six weeks ago and I found fields that had been in corn for twenty-five years. Now, this mold propagates in the soil, and when you plant corn therein you are bound to get the disease. What I want to call your attention to particularly is, that I want your co-operation. If you find the disease, I would be glad to have you send some of these moldy ears to me. I know I have told farmers of this mould and have described this disease to them. They were diverted by this fungus that caused the corn to fall over the way it does. I would like to have you farmers that have observed anything of this kind in your various parts of the state to raise your hands.

Mr. Cownie: Professor, down in Iowa county—I have spent a good deal of time in Iowa county—our corn has stood up quite well, but I never saw so many ears of corn that have been infested with worms as this year.

Prof. Pammel: There are a good many ears affected by worms where we do not find mold.

Mr. Cownie: I have been identified with farming in Iowa about fifty-eight years and, while I was a few years in politics, I never gave up farming, and I am frank to confess that I never saw as much moldy corn and the worms in as much of it in the time I have been in Iowa county as I did this year when my tenants were husking.

Prof. Pammel: I thank you, and I hope you will continue to investigate and co-operate with us in this matter. This is a very serious problem, because I think it amounts to not only five or six million dollars, but twenty-five or thirty million dollars, for corn is one of the plants that is unusally free from disease. Some of these other plants have a great many diseases, but I think Iowa owes its greatness and prosperity to the fact that it has been lacking in this fungus on the corn and consequent disease and this thing coming on has been a great damage.

Delegate: I would like to ask if any one variety is affected more than another. I have a field of the yellow dent. A great many of the stalks were broken over, and I thought it was on account of the variety.

Prof. Pammel: So far as we have been able to learn we find it in the yellow dent and also in other varieties. I saw a field out in the western part of the state, I think it was the Iowa Silver Mine as near as I can determine, that was quite free from disease. Another thing is that the late corn has less disease than the early corn, and the corn that has been planted deep has less disease than the corn planted shallow.

Delegate: I live in the northern part of the state—in Bremer county. My experience is that the early variety stood up better.

Mr. Cownie: Is it a fact that there is a great deal less disease and less mold, and less breaking down of corn stalks where only two crops are raised in succession?

Prof. Pammel: Yes; I would say only one crop.

Mr. Cownie: It is difficult to raise only one crop in rotation.

Prof. Pammel: I believe the time is coming when we will have more attention paid to rotation of crops. There is no doubt, as you say, that the longer you grow corn on a field the more it becomes infested with these parasites. Of course we have not gone far enough in the investigation to tell what the exact status is. I would say, if possible, it should be only one year. The trouble with Iowa farmers is that they do not rotate their crops. It is with them simply a question of growing corn, corn, corn, like the cotton plant in Texas; nothing but cotton year after year, and they introduced the cotton boll weevil down there. I say that was a blessing in disguise to Texas farmers, because they were forced to practice rotation of crops, which is soil sanitation in other words.

Delegate: You say this corn worm is likely to follow where you plant corn year after year?

Prof. Pammel: Yes.

Delegate: I have a piece of prairie sod, and the first year I had a big crop, and the second year; the third year I noticed it came down. The fourth year almost half of that corn went down, but did not go down until it was pretty well gathered. I am satisfied that following corn after corn you are liable to have more trouble with the worm.

Prof. Pammel: The fact is, that is the only way you can treat root worm or diseased corn is by rotation of crops. I would be glad to get any notes from Mr. Bennett and Mr. Cownie as mentioned. If you will just drop us a few lines at Ames, I am sure you will get a prompt answer, and we will try to diagnose the case for you.

Chairman: We will now hear the paper of L. H. Pickard of Harlan, on "Making the Fair Pay."

Mr. Pickard: Mr. President and Gentlemen: It is seldom I ever make any apologies, but I feel that I will have to today. I have been four weeks the companion of a trained nurse, and just came out of the hospital Saturday night. So that I hope you will look over any defects, or anything that is not right that I may have to say on the subject. The subject I have to work on is how to make a fair pay. Now, the points that I shall cover will only be of the local attractions. I find in most every place the conditions change; that is, some localities like this and some like that in the way of attractions. In making the fair pay it is necessary to hold a three days' fair instead of one. Now, there are a great many of our fairs that have but one good day. There are three days, but only one that is a good day. Now, what I will say is with reference to trying to make the three days good.

MAKING THE FAIR PAY.

BY L. H. PICKARD, HARLAN.

When I received the notice from Secretary Rigby that I had been assigned the above subject, I wondered if he really expected me to give up so valuable a secret, even though I possessed such knowledge. Or was it for the same reason the farmer put three dozen eggs under the sitting hen? He said he knew that she could not cover them, but he just wanted to see her spread herself. I fully realize the responsibility, but, like the hen, I am just fool enough to try to cover the subject. Now, as I understand the subject, it is not necessary that I should be qualified to do the act, but simply like the guide board that is always telling the way but never traveling it.

I suppose the first thing to do would be to diagnose the case, the same as a doctor does with a case before he prescribes treatment, so I will begin by pointing out the ailments.

With my limited experience with many of the county fairs, I find that the secretary does not close his entries the evening of the first day, but allows the exhibitors to enter at least the forenoon of the second day. This becoming a custom, many of the exhibitors do not bring their stock in until the second day. The association puts on a program in the afternoon of the second day, but the public, knowing that the second day is poorly patronized, usually waits until the third day, which is usually a good day, if it does not rain. The next day, being the last day, there is usually a light attendance. Now, why is this, and why don't they get a large attendance the three days? There is surely a cause where there is an effect.

No fair can be a success unless at the close of the fair you have a balance in the treasury. I care not how good a program you put on, if you do not have the attendance your fair is a failure. It's much the same as the temperance lecturer who was billed for a lecture. When he arrived at the hall no one was there but the janitor. They sat around for half an hour or so and still no one came. The lecturer finally addressed the janitor, saying: "My friend, I have no doubt but you are a good temperance man, a good citizen and a good neighbor, but, as an audience, you are a damn failure." So it is with a fair, you must have the attendance or your fair is a failure.

Now, the majority of the county and district fairs charge thirty-five cents at the gate, fifteen cents less than is charged at the Iowa State Fair. Now, one thing is sure, either the state fair is too cheap, or our little county fairs are overcharging the people, and I think the latter is true, and that, I think, is why we do not get the attendance for the three days. One day is about all they think they can stand. Why is it that the five and ten cent picture shows have driven the theaters out of business? It's the price that gets the crowd at the picture show. It's the price that sells the Ford auto, and who will say taht it was not a wise business policy when Ford cut the price still lower last fall, at a time when he could scarcely fill his orders? It's much easier, when the public is coming your way, to keep them coming than it is to get them after they begin to break away. It costs a fair no more to speak of to entertain ten thousand people than it does one thousand, after you open your gates. It's not like a merchant selling his goods at a discount. If he does not sell he has his goods, but, if a fair does not get the people, they have nothing to show for it except blue sky.

How would I get the people three days to the fair instead of one? I would put on sale early a ticket good for three days, which I would sell at a discount from the regular price of admission. For instance, if the regular price of admission was thirty-five cents, I would sell a ticket good for the three days for seventy-five cents. So on the second day of the fair a single ticket, good for that day only, would be thirty-five cents, or one good for three days, seventy-five cents. I would try, of course, and have as many as possible of the three days' tickets sold before the fair opened. Some may say this can't be done, but it can. Fully one-half, or more, of our Chautauqua tickets are sold before the Chautauqua opens, and these are sold at a less price than they are after the Chautauqua opens. The prime object is to get the money into the treasury as soon as possible, and by getting a large number of these tickets sold insures a good attendance for the three days. Now, the prime object is to transfer your second day from one with a light attendance into the biggest day of your fair. So, with that in view, I would make the second day children's day, and along in May, I would have printed a ticket good to all children twelve years old and under, and I would send out a good bunch to every teacher of every school in the county, and I would send the teacher a ticket good for that day. Then I would go garther. I would put on for that day a spelling contest, open to all school children in the county who are in the eighth grade and under. This should be done through your county superintendent. Have every school in the county hold a spelling contest and the five that win are eligible to attend a township spelling contest, held later, and the five winning at the township spelling contest to be admitted to the contest at the fair. In this way you have every school child and teacher in your county boosting for your fair. We make seven premiums, with the first and second gold watches. These seven premiums are selected and placed in some of the merchants' show windows a month or two before the fair.

Now you have about every fellow interested who is looking for a bargain in tickets, you have all the school children of your county talking and boosting and talking about the prizes their township is sure to win, and they are all going because they already have tickets. The parents just have to go, you know, to take the children, and get those cheap tickets.

Following this, I would give premiums on each day for a tug-of-war contest. Get, say, six teams organized in your county, two teams to pull each day. Then I would suggest that the county send out a challenge to any nearby county and select seven of your best men out of your six teams to pull them. Of, if you think you can muster a cracker-jack of a team, you can send a challenge to the Danish Brotherhood tug-of-war team of Omaha, who held the distinction of never being beaten, and they will come out on a special train loaded with boosters.

Then, of course, you must not forget your baby contest and educational program. Of course, you must have good races, but don't give too large purses, as you are liable to scare the horseman out. They do not like to race for too large purses—$250 to $400 purses will catch the most of them. However, don't fail to put on a relay running race for your county horses. That will catch the young fellows who are past the eighth grade in school work and too light for the tug-of-war.

Now, please do not think that any of the above stunts cannot be pulled off successfully, for they can. In fact, you can fill your fair ground on the first day of your fair until, like the hobble skirt, there is hardly standing room. I fully realize that there are fairs in the state that will not approve of lowering the price of admission, from the fact that they can fill their fair grounds the three days at thirty-five cents. I find, however, that there are about thirty-five out of ninety-one fairs in Iowa that did not pay expenses last year. The suggestions I have offered in this article are along the lines of awakening a deeper interest throughout your county. When this is done, there will be little difficulty in getting a good attendance, and, at the same time, distribute a portion of the money among your patrons.

DISCUSSION.

Chairman: Has any one anything to offer or say upon this subject?

Mr. Pickard: I will be pleased to answer any question if I can. We have tried these attractions and find them a great success.

Mr. E. R. Mitchell, Marion: Mr. Chairman: I would like to say one word. This idea of selling these season tickets and selling them in advance; at our fair last fall it was the first time it had ever been done there. A great many said it was impossible to do it, but there were a few of us got together and got some season tickets up for which we charged thirty-five cents for a single admission. We sold these season tickets for $1.00 for the three days, $2.00 for a man and his wife and children. We sold over $200.00 worth of tickets before the gates were opened, taken in that way. If you should run up against bad weather,—and that is one of the worst things the county fair has to contend with—you have your money in hand and it will almost run you through.

Mr. Pickard: That is the object, to get the money in your treasury as soon as you can. The first day, when we have taken that course, we have usually enough money in the treasury to carry us through, so that the balance of the time we are that much in the clear; that is, as a rule. The main thing is to get your attendance. If you can get a large number of tickets out sold for the three days they are going to attend the three days.

Another thing I failed to mention, if you would have a good large crowd on your ground the entire three days you can get twice as much for your concessions as you can when you only have one good day and not so good the rest of the days; and if you have a good fair for three days everybody goes home well pleased and the program is such that you can give them plenty of entertainment.

Chairman: We will next have a paper or address by Mr. Mullen of Fonda, on "The Automobile and the County Fair."

THE AUTOMOBILE AND THE COUNTY FAIR.

J. P. MULLEN.

Mr. J. P. Mullen: Mr. President and Gentlemen: I probably owe you an apology for not having a paper on this subject. Whatever I have to say will be in a hit and miss way.

As I look upon the automobile question it is applicable in relation to the success of all the fairs in the state of Iowa, from the fact in these days, and I believe the most of you will realize it, it is almost impossible to secure excursion trains from the railroad, and railroad rates are gone in this state for some years, so that we cannot secure railroad rates. As I said, it is almost impossible to secure special trains. There may be a few places, or a few fairs in some parts of the state that can secure the special train, but they are very few. So that looking at that question in the light of an advertising proposition and in securing attendance at the fairs, the automobile has largely taken the place of these excursion trains and has added to the attendance and the gate receipts of the county and district fairs of Iowa. I look upon this question as an advertising scheme in this way, that men will drive in their automobiles a distance of twenty-five or thirty miles to a fair, while without the automobile they would not drive ten miles; so that in advertising, or seeking attendance to your fairs you can cover a radius of fifteen to thirty miles, and the people by using the automobiles, can reach there in less time than they formerly did in other kinds of vehicles. Now, I have been informed that next year there will be more automobiles in attendance at the county fairs than ever before. I understand that Henry Ford is going to shorten up the wheelbase of his machine so there can be more of them on the road. So I warn you, gentlemen, to be prepared and secure permanent places at the county fair for these machines. As you are aware, last year it was quite a problem to secure a place to take care of these machines after they reached the fair ground, as almost every one that comes wants to take his machine in on the fair ground.

At our place last year we purchased, I think, about 3,000 banners to be attached to the automobile, and gave them away. Every man who drove an automobile secured one of these banners or pennants free, and we gave them free not only to the owners of automobiles, but to the people generally. As to the question of the Ford machine, instead of advertising the giving away of a Ford, we will possibly give away an automobile of some manufacture. In that way, gentlemen, you will advertise your fair over a great space of territory by giving away these banners, going around to these adjacent towns and distributing the pennants and banners there, and as most of the automobile owners are willing to put on one of these pennants and will drive around over the country for two or three months before the fair. So, you can readily see it is a big advertisement.

As I said, I have no speech prepared, but I want to assure you that I am glad to see so many here, and glad to see so many horsemen in attendance.

Now, I repeat again that the automobile is one of the greatest things that can be utilized to make a fair a success and to make it a paying proposition, secure the names of the automobile owners. Get in touch with the office of the secretary of state and procure the names and addresses of all the automobile owners in the territory adjacent with your fair and in that manner having secured the names and addresses, send a personal letter to every automobile owner within a radius of thirty miles and get in touch with them, and in this way you can get the proper literature to them and you virtually make a personal appeal to them. I might say in that connection, that it would probably cost twenty-five cents a hundred to secure those lists and they can be used by two or three fairs around in the country. I believe it would be a good thing for the different secretaries to secure the names of the automobile owners within the radius heretofore stated.

DISCUSSION.

Delegate: What do you charge the automobile owner at the gate?

Mr. Mullen: We charge twenty-five cents at the gate. We had the question under discussion last year as to whether they should be admitted free of charge.

Delegate: What do you charge for a Ford?

Mr. Mullen: It will be owing to what is the difference between an automobile and a gun.

Delegate: Do you charge them inside of your grounds?

Mr. Mullen: Yes.

Delegate: We charge fifty cents.

Chairman: Is there any one who has any questions they desire to ask Mr. Mullen? If not, we will hear from Mr. Clark, on the subject of ''State Aid for County and District Fairs.''

STATE AID FOR COUNTY AND DISTRICT FAIRS.

BY WM. CLARK, MARSHALLTOWN.

Mr. President and Gentlemen: The question of "state aid for county and district fairs" is one on which there can be no difference of opinion, unless it be in regard to the maximum and minimum limits to which the fairs of the state are entitled.

There is not a person present this afternoon who will not agree with me that the great state of Iowa, blessed beyond any other state between the Atlantic and Pacific oceans, Canada and the Gulf of Mexico, in the value and fertility of her soil, her mineral products, factory products, live stock, poultry and general prosperity of her people, that gives less encouragement and aid to the county and district fairs within her borders. I shall not attempt to tell you what other states are doing in the way of aid to their fairs, as I understand your secretary has detailed information on that point which he will give us later.

The only matters for us to consider at this time are, the best method of presenting the subject to the incoming legislature, and how to get the present law governing state aid amended or repealed and a new one enacted, giving the local fairs sufficient state aid that they may continue their annual fairs at the high standard now attained.

I am not a pessimist, but, to me, the outlook for the local fairs in the future is far from bright. First, let us look at the financial condition of the county and district fairs of the state, for a period of seven years last past, or from 1907 to 1913, both years included. I am taking these dates because I do not have the official figures of an earlier or later date. I get my information from the annual Year Book of Agriculture, so there can be no question as to their correctness. In 1907 the indebtedness of the fairs of the state was $101,157. In 1913, the last available report, this indebtedness had gradually increased each year until it had reached the sum of $204,954, an increase of 102% in the seven years. Do you wonder that I question the ability of the fairs to continue for any extended period of time, unless the state gives them more encouragement and financial aid. During the same seven-year period the amount paid in premiums to actual exhibitors, not including races or any other form of amusements, had increased from $59,994 in 1907 to $88,186 in 1913, or an increase of

47%. In other words, for every $47 we have increased our premiums we have been compelled to borrow $102—not an encouraging outlook for local fairs in Iowa.

Under the present existing conditions, the fairs will get out of debt just about the same time as the cat in the well, who started half way down an eighty-foot well, tried to jump out, but every time it jumped up two feet it fell back three. In 1907 the state distributed $16,532 to its county and district fairs, in 1913 the amount was $20,205, an increase of a trifle over 22%. Again, comparing the years of 1907 and 1913, and giving the amount in dollars, the fairs have increased their premiums, $28,222 and the state has increased its aid $3,673.

In this seven-year period we have paid in premiums to the breeders of live stock, the raiser of grain, and the housewife, $583,326. Is it not time the great state of Iowa put her shoulder to the wheel and gave us more assistance in placing these county and district fairs on a safe financial footing.

Just how to accomplish the desired end is a question on which there may be a diversity of opinion. I would favor the repealing of the present law granting state aid from "funds not otherwise appropriated," and enacting a law, making a specific levy for the support of fairs, the same as is now made for the support of the educational and other institutions of the state, collect the money as other taxes are collected, and disburse it, through the state treasury, to the county and district fairs in proportion to the premiums paid by each. I am aware that this plan would meet with some objections. We would be told it would increase the taxes and that the farmer, manufacturer and business man would not stand for it. Let us see what it would cost on a farm of 160 acres, or any other line of business with the same money value invested.

The net taxable property of the state, outside of moneys and credits, according to the last report of the auditor of state, is $758,312,366. A tax of 1-10 of a mill would raise $75,831. Now, how much of this is paid by the land owners of the state? From the same report, I find the taxable value of farm lands to be $424,034,232, or 54½% of the net taxable value of all properties, making their share of the tax of 1-10 of a mill $41,327. The same report says there are 34,616,071 acres of farm lands in the state, dividing this into farms of 160 acres each, I find the tax on each farm would be a trifle over 19 cents. But this would not all be "additional tax," as the state is already paying, as I have shown you, over $20,000 a year, or nearly 27% of the amount, leaving the actual increase on a farm of 160 acres less than 14 cents per year. I have taken the farm as an example, not because I think they would make more objection than the business man, but for the reason that the amount of additional tax could be shown more clearly on farm property than on any other class. Of course, the manufacturer or merchant with an investment of equal value to the farm would pay the same amount.

Four years ago I was one of a committee that appeared before the legislature asking for the passage of a bill granting more state aid. The first obstacle we encountered was that there was no available money in the general funds of the state, that all the funds will be needed for other appropriations, etc. If we can secure the passage of a law making a specific levy for state support of fairs, these shopworn answers will have no weight, as the money will be there, and can be used for no other purpose than the specific one for which it was levied and collected, namely, the support of county and district fairs. In this way the fairs will receive sufficient aid to place them on a sound financial footing and allow them to continue their work, now so well established, and which must suffer or fail unless relief comes in some form.

Gentlemen, I have briefly given you some of the many reasons why the fairs of the state are asking for larger aid, and one plan by which the desired end could be accomplished and now leave the subject to you for further consideration and such action as you may deem best to take.

Mr. Clark, continuing: In connection with this I will say I would also like to see a tax levied and collected from year to year for the support of the state fair that they might accumulate funds for necessary buildings as they are needed. I presume they are not needed at the present time. I believe a fund could be collected in that way by a general tax and as often as $75,000 or $100,000 would be accumulated it might be turned over to the state and they could use it to good advantage for the state fair.

DISCUSSION.

Chairman: Has any one anything to offer on this subject, or any discussion in any way?

Mr. Bradley, Rock Rapids: Mr. President: In regard to this question of state aid, I am of the opinion that the fair that depends on state aid, or any other voluntary aid from anybody is a nuisance. They are all the time trying to get at that money. The fair is a show that the people make good by their attendance, and therefore it is necessary to get the people interested in it and working for it. If you get them to do that it will be successful; and I don't believe in any aid to state, district or county fairs. We run the fair in our county for $13,000 to start with, and we have increased our improvements to $27,000 all from earnings and have $4,000 on hand. Why, we do not know what to do with our money, we have so much of it.

In Minnesota I believe that the state pays the majority of the premiums, and I don't know of a single fair in that state that is one-two-three with the Iowa fairs. If you depend on somebody to give you a donation, or anything of that kind, you will never make any money yourselves. It is like the old veteran soldiers drawing pension; they depend upon that. I don't believe there is any county fair in the state with the right kind of people behind it but what can, with a charge of twenty-five cents or thirty-five cents admission, have all kinds of money, and have as good a fair as anybody would want.

Delegate: Did you ever have rains during your fair?

Mr. Bradley: Yes, sir. The first year we had rain every single day. The water was so deep that it ran over their shoe tops, and yet the people said we had a good fair notwithstanding.

We sell advance tickets about ten days before the fair and get in about $2,000 in that way. The people buy those tickets and they come in from as far as 100 miles to our fair, and it is because we give them what is right, and the result is we have money to loan to you poor fellows.

I think every fair should be self-sustaining. The more you get in the way of donation the more you get to depending on that and you don't use your energy to get out and earn it. We will get over $2,000 in privileges every year and the men come back because we furnish the crowd, and instead of raising our price, if anything, we lower it. Thirty-five cents is all we charge; fifteen cents for admission to the grandstand, reserved seats twenty-five cents and twenty-five cents for automobiles.

Mr. J. Morton, Sioux City: Mr. President and Gentlemen: I think the truth of the statements made by our friend Mr. Bradley is contradicted by the action of nearly every state legislature in the United States as, they all provide state aid for their county fairs. Now, Mr. Bradley says that they do not want anything, but I notice that he takes that little $300 just the same. The fact is, I think those fellows at Rock Rapids take everything that is not redhot or fastened down. I don't know how they do up there. Don't they sell stock, Mr. Bradley?

Mr. Bradley: No, sir.

Mr. Morton: Anyway, every state in the Union helps the county fairs—Illinois and Minnesota give each fair, if they have a fair, an amount not to exceed $1,500. Ohio gives 1c for every $100 upon the taxable property of the county where the fair is held; and so on down; and we in this state that is richer than 90 per cent of the states that aid their fairs 100 per cent or 200 per cent more, put up with $300. Now, these fairs are educational institutions, and if they are they ought to have the help of the state, and if we are going to have help, we ought to have help that is worth something. If I were Bradley I don't believe I would take the $300. This matter is not a matter to joke about, it is a matter of serious importance to every one of these county and district fairs. As far as I am personally concerned I have listened with a great deal of interest to the paper. I think there should be further discussion on them after. I think it should be taken up later on when we have more time; probably tonight at the banquet, at the business session, and I think a committee should be appointed to prepare appropriate resolutions to go to the legislature and ask them to do something. There is no reason why this state should not do as much as Minnesota; we are richer, have more money, and the matter should be taken up later: I think we should proceed with our program at this time and take this matter up later. With the exception of Rock Rapids, I do not believe there is a fair represented here but what would accept a little more money if they could get it.

Mr. Christianson, of Clinton: Mr. President and Gentlemen: I am in favor of a larger appropriation from the state, and if the state has got money to spare and you cannot use it in any other way, put it in the roads for the people to travel over to come in to the fairs.

Mr. Cameron, of Alta: I want to make a little explanation for the benefit of my friend Bradley. I live up there and I know something about that fair. It is the most loyal municipal fair I know of in the state of Iowa. The fact of the matter is, they don't allow anything to go on in Lyon county until fair time and nothing to go on then that would interfere with the fair. Last year, I think it was, a circus wanted to show on the ground and the mayor would not even issue them the license. Some of the farmers out there had a grievance against the fair people and agreed to rent the circus a piece of ground. What did they do? They went to work and arrested that whole circus, the court bound them over and held them in jail until the fair was over. They can't help but make money. Not only that, but Bradley was mayor.

Now another thing about Clark's paper is that it was very interesting and it is on a matter that we are all interested in, viz: the success of the county fair. Now we had a bill passed—I don't know whether the last legislature or the legislature before that—allowing the county to vote on an appropriation of one thousand dollars for county fairs. All of you gentlemen know that when you submit to any county a proposition to tax the farmers and the business men in the county for a county fair, that your chances of carrying the apropriation are mighty slim. Now I would like to see that bill repealed and the matter left with the board of supervisors to make an appropriation, but you will never get it by taxes. I would like to hear from anyone here that ever knew a proposition of that kind to be carried. I was talking with Mr. Stansbury of Mason City. He said it looked just like ''getting money from home,'' and after the vote was taken it was nine to one against it. You all know you can't go out and submit it to the voters and expect them to sanction a taxable proposition because all the different local interests spring up and will be against you. But you can go to the board of supervisors, a body of only three to five men, and explain to them what the county fair is doing for the county, how it is improving the stock and building the county up; that it is a mighty good thing and you might get an appropriation of a thousand dollars, when you would never get it if you left it to the vote of the taxpayers.

Mr. R. W. Schug, Strawberry Point: Mr. Chairman: I am certainly not opposed to state aid for county fairs. In fact, I would like to see the legislatures pass a bill allowing county fairs at least one half the amount that they pay out for premiums. But I believe there is a lot of good argument in some of the remarks made by Mr. Bradley. I think any county fair that depends on state aid to make a success cannot be called a success. If the county fair cannot sustain itself without the state aid they are not managing it properly. That is not saying that we would not accept state aid, if we got it. But take, for instance, our fair. The last few years, up till four years ago, the management made every effort to pay off whatever debt there was on the property and they cut down on their entertainments and the attendance dwindled down until our fair was near ''busted.'' We were practically out of debt, but we had no fair left. We have a property there worth eight or nine thousand dollars. The grounds, without any improvements on, are worth $8,000. We went to work and put up a new horse barn two years ago, I guess about as good a barn as you will find on most of the county fair grounds; built new fences, put an addition to the amphitheater, put in a new double deck judges' stand, a ladies' and gentlemen's toilet and permanent waterworks, and the association is three thousand dollars in debt. Some would say that was not a success, but I can show you to the contrary. We put up over $4,000 worth of improvements the last three years, and are still three thousand dollars in debt, but we give the people a show for their money. We charge twenty-five cents at the gate, fifteen cents at the amphitheater and the show this year that we gave the people was something they will remember. I believe the only successful way to run a fair is to give the people something worth their money. If you don't do that, I think it is something like the saying of President Lincoln that "You can fool some of the people all the time, all the people some of the time, but you can't fool all the people all the time," and so with county fairs, you can't get the people all back after they have been fooled once. Now the fair is all right, but in our county I am heartily in favor of doing all we can without the state aid in order to make our fair a success, but at the same time I am in favor of state aid.

Delegate: The idea of this state aid seems to be misunderstood by a good many. The idea of state aid to a county fair is not to build buildings on the ground; it is not to pay for horse races or free attractions, but to encourage the fair association to pay larger premiums on agricultural and stock exhibits. It is based, not on the number in attendance or what they pay for horse races and such things, but it is based on the amount of money they pay for agricultural exhibits and on live stock, and the more premiums you pay on these exhibits the more encouragement you give to the pure bred stock raiser at the fair; you make it an object for him to bring it to the fair, and when he brings it there and compares it with stuff, either inferior or better lines than his stuff, he goes back home with a determination to improve his stock or agricultural stuff. We are not asking anything to build up buildings or put a horse race course on the grounds. The law don't give you a cent of money for any of these things. The thing we want to do is to have state aid so we can encourage better live stock and better farm methods by paying better premiums. I want to say that the amount of money you draw for the salaries does not warrant a very great deal of business ability or experience in running a fair. Now, this fair proposition, as I take it, where the state aid should come in is strictly along the line of improvement of these farms and the improvement of housework. It is not for entertainment. It is not for the show. The man that can't make the show win ought to get out of the show business. It is for the improvement of argicultural industry in this state, and I believe it is too serious a matter to laugh about; too serious a matter to pass off without serious thought and therefore, I move that this matter be continued until tonight at the banquet.

Motion seconded, put and carried.

Chairman: The next subject will be "Uniformity in Premium List Classification," by Mr. Roy F. O'Donnell of Ames.

UNIFORMITY IN PREMIUM LIST CLASSIFICATION.

BY ROY F. O'DONNELL, AMES.

Mr. Chairman and Fellow Farmers:

Speaking of the subject of the uniformity of fairs in the premium list is a question that bothers every exhibitor that ever shows at the county fairs. I had a little chat a few minutes ago with Mr. Pickard, who, by the way, is secretary of a fair at which I judged, completing last year my ninth year. Preceding that, for about ten years, I had experience, with my father, showing hogs—ever since I have been able to carry a hog hurdle—and I have come in contact with good, bad and indifferent fairs, good, bad and indifferent management, and I should say that the one thing more than anything else that is bothering the fair management of the various fairs of this state is the question of where the amusement features shall end and where the educational features shall begin. These are the two things—amusement and education. I think one thing that has been put in the background in the past is the question of premiums for live stock. I notice Mr. McLaughlin sitting over there. I would like to ask how long would McLaughlin continue to exhibit at fairs if he did not have the money paid on the exhibit. Still, at many fairs they have paid all expenses, paid for the amusement features, paid for the races, and all those things, and, after that, pay the farmer so many cents on the dollar for bringing in his stock, simply, or, at least, to all appearances, assuming that that man has been to no expense in bringing that stock in. Now, that is not right, from the standpoint of the man who makes that show. During the last year some three or four of us in the extension department who have been judging from three to five, six or eight years, conceived the idea of getting together with you men and formulating a uniform classification in such a way that every man that exhibited live stock would have a fair shake. Just to illustrate, down in the south part of the state there is a fair, which I attended, I should judge it was four or five years ago, that offered for first prize standard bred stallion $10, and then combined on Percheron, Belgian, Clydesdale and Shires an offer of $10 for the first prize on all four breeds. Now, I want to ask you men if that is fair for the breeders of horses. Last year I was going to mention that question, but so many things came up that I did not get the opportunity, so I know you men will pardon the infliction at this time.

Down in Wright county, in judging last year, I had brought before me a Percheron stallion, a Shire stallion, a standard bred stallion and a Shetland stallion for championship show. Now, I want to ask you farmers, if you had a class of corn to judge, how would you like sweet corn, pop corn, reds and white and yellow dent corn brought in competition for you to judge as to the championship? I made one fellow mad when I told him that I would not place a championship premium on a Shetland pony horse, no matter what anybody thought about it. I think that we ought to encourage the things that are most vitally important in agriculture; that means the improvement of the draft horse, beef cattle, hogs, sheep and such things as farmers are interested in.

Now, another point: We have a fair at Ames, and I am going to take a little privilege this afternoon of bragging on the little pumpkin show. We have up there, you know, all the races usually held at fair ground race tracks, trotting, pacing, riding horses, carriage and buggy teams, and it is a lot of fun; but the main thing in that show is the educational feature. I want to say, in all due respect to other premium lists, that it is one of the best premium lists I have ever seen in the whole state. It gives premiums on things that the farmers are most interested in. And if you men should drop in there and see the farmers, and the farmers' wives and daughters and sons watching the judging of those horse and cattle classes, you would see that it was the thing they were most vitally interested in. Now, Mr. Clark, I want to ask what it is that has made the Marshalltown fair and the Waverly fair what they are? It is simply the attention they have given to their classification of live stock, to their classification of grain, to their classification of domestic science. As the gentleman said here, these are the things that concern the farmer and the farmer's wife; and those are the things that are the most important.

Now, speaking on the horse question again: Another thing we find very important in giving premiums, and that is that fairs are compelled to throw two breeds of horses together. If you just throw the draft horses, the Clydesdales and the Shires together, and the Percherons and Belgians together, then it makes it better judging than if you pour them all together in a common herd.

Coming to the cattle classes: Last year, at a fair which I will not mention, I had come before me (and this in a beef neighborhood, where beef is the improved type of cattle) for championship of all breeds, the champion dairy bull. Now, I want to tell you, if there is a man in this state who can do justice to that sort of classification, I would like to see him. When I had given the championship to one of the best Jerseys in the state, I had to make my getaway suddenly to save my hide. And it is not fair to the farmers themselves, it is not fair to the man who is to judge, and the thing we are asking is that, through your coöperation, we can get up a circular, or bulletin, outlining a few of these things most common (these few mistakes we find all through the fairs), embodying the features in the premium lists that are real good, and get them out over the state so we can have uniformity of classification.

Now, along the hog line: At a fair last year we had a man come down to show in the produce class (the class for sows and products). We had one man who brought out a sow and two litters of pigs, twenty-one pigs in all; he had brought in everything, runts and all. Another man, showing in the same class, brought out a sow and one pig. According to the decision of the secretary at that fair, the one pig filled the class. He had told this man, over the telephone, if he brought down one pig it would fill the class for a producing sow. So, in placing those before me, according to that classification, was wrong. I had to give the sow with one pig the prize, as against the sow with twenty-one, and every one very good, with the exception of one or two runts. Now, I think we ought to call for a class with a sow with four or six pigs.

From the standpoint of sheep, I happen to recall some sheep at one fair at which I judged, where there was an exhibit of seventy-five or eighty that would not contest because all exhibits had to come under the classification of medium, fine and coarse.

I think a good deal of good work is done along this line by the judge himself. In showing hogs with my father for about ten years before I went to judging at fairs, and working with and handling hogs a good many years before that, I often recall his remarks. He used to say, "A good judge is a man that keeps his ears open and mouth shut," and there is something to it. Yet, I feel that after you have done your best with the right kind of men, you can suggest to them changes in their premiums which they will accept and be grateful therefor; and I think that every man who judges fairs ought to do that if he finds there has been a mistake like in the case referred to, where the two fellows exhibited producing sows, where one fellow had a sow with one pig, as against another who had a sow with twenty-one, and they are going to change that to a sow and four pigs in a brood, instead of a sow with one pig.

When we were taking up this work, I received a letter from one of the secretaries asking that we take up the question of races and race horses. I am not much of a race horse man. To be frank, that is a "dip serum," and something we are going to keep away from and let you work out in your association work. We are going to leave that matter entirely to you. I am reminded at this point of an expression that Mr. Kennedy has often made. The statement is, with due apologies to Mr. McLaughlin, that "wherever there was one fast horse in a community there were twenty fast boys, and the horse is not worth a nickel if he is not fast, and the boy is not worth anything if he is fast." For that reason, we are going to steer away from that part of the show. But we do figure on taking up these three things: The classification of premiums on live stock, the classification on grain and classification on whatever the farmer may produce outside of these. Speaking of this classification of sweet corn, pop corn, red and yellow dent corn, we had that very thing happen in the northern part of the state. I saw Mr. Lewis judging horses, sheep, etc., for the champion quality for the best ten ears, and he had the first ten ears of pop corn and ten ears of sweet corn and they asked that they be judged along with Reid's champion yellow dent corn, and asked for the championship. I think we cannot adjust these things. What I would like to do is to get suggestions from the secretaries that are here. We would like, also, to hear from any secretaries having ideas as to uniform classification laws. I understand, from Mr. Clark, that some years ago there was a committee appointed to make a uniform premium list over the state and they did not succeed very well. One thing we want you to get away from when we send out these lists is that they are not mandatory, but that they are merely suggestive. We do not ask any man to take that list and follow it out literally. You work in the points that are valuable to you. Whatever you think valuable, as far as the amount of money is concerned. We are not going to dictate to any fair, or try to, what they shall put up on a first prize stallion, etc. I think we ought to do a little bit different than some of the fairs have done. We had figured up $405 offered for premiums, and of this $200 and some odd dollars was offered for standard bred and driving horses and about $100 for draft horses, grade, pure bred and standard bred, and I think that is hardly fair. I am not going to try to enumerate it. I never made a speech in my life. Every time I undertake to make a speech I am reminded of the minister who outlined his sermon. He did not know just how it was going to come out until he tried it out before an audience. He got it a little longer than he intended to and, while delivering it, he noticed one man in the back part of the room dozing and he called to an Irishman near the man and said, "Pat, won't you awaken that fellow back there?" Pat replied, "Be gob, you waken him yourself, you put him to sleep." However, I would appreciate any suggestions you make along the line of uniformity of classifications. I don't want to put you to sleep, but I want any suggestions you can put in along the line of classification. I will appreciate all you can do along that line with the fair board. We are getting some of these things together and are especially trying to get away from this thing of putting draft horses, Shetland ponies and driving horses, beef and dairy breeds together for championship. I think it is a good thing to have a draft horse championship, but don't mix them with different types. I thank you.

DISCUSSION.

E. J. Curtin, Decorah: Now that sounds to me like a very pious talk. I don't believe a man sent out by Ames college should make such extravagant statements. Mr. O'Donnell is talking now to a board of fair managers; he is not talking to an aggregation of farmers. Where would we be if we didn't have standard bred horses and other standard bred stock to maintain our colleges? He says that Mr. Kennedy made the remark that for every fast horse there were twenty fast boys. Now, I have managed shows and have hired Mr. Kennedy to lecture at those shows and I never heard him make that statement in my life. I saw nobody else was going to bring this matter out before the board of fair managers and I thought it was about time for some one to say something. Now if Mr. O'Donnell will get back to facts and figures he will not be so extreme in his statements. I raise a few standard horses, hogs and sheep myself. We should have a fair that has every kind of animal standard; don't need to be all standard. We want draft horses, but we don't want very many standard bred, but we must have some. We must have races and we must have attractions at the fair. We should go on broader plans. I'll tell you something; they raised a standard bred three year old colt there at Ames that sold for $6,500. Did they ever sell a draft horse for a third of that? They didn't sell the colt for that amount, but the man who got him sold him for that. Did they ever raise a draft horse that sold for $650? There was a horse sold in Marshalltown for $10,000, and he went to New York. Was there ever a draft stallion sold for $10,000 that was raised by the college?

I am talking of Iowa. Now, don't think there is any occasion at this time for personal talk. I do not know Mr. O'Donnell. In fact, I never saw him before today that I know of. So let us be fair; let us get down on the ground floor. There is nothing personal in what I say and what I am getting at with you is the fact that you are addressing a board of managers, and we, as fair managers, want to secure standard bred horses and we have got to raise them if we get them.

Mr. O'Donnell: Mr. Chairman: I just wanted to explain our attitude. I don't know whether Mr. Curtin was in at the time I made the statement. I told you at the outset that I am not a race horse man; that I do not understand the game, and for that reason was leaving that up to the secretaries of fairs themselves. They know better how to work out the race horse problem than I. I have always maintained that in order to get a good crowd you will find that you have to have races. There is not another judge of stock today that is any more favorable to the race horse game than I am, but I believe I got more blame than any other fellow from Ames college today; but the thing I like to do is to work for the uniformity of the premium list. There was one fair that I could mention where they had a $10 premium for standard bred and $4 for all other breeds. Now what I claim is that the standard bred should have the $10 premium. If the Percheron gets $10, I should say the standard bred should have it. I don't feel that the Percheron, the Shire, the Clydesdale and the Belgian ought to be bunched as one class and given a $10 premium and the standard bred horse a $10 premium in one class. I don't believe we ought to cut out the standard bred draft horse. In our fair, what we call our pumpkin show, we spent 40 per cent, I think about 32 per cent, in the horse class, which I think ought to be done in our driving classes, in our saddle classes, and in our standard classes, but I don't think we ought to combine our driving classes and then have our standard class by itself. I don't feel that we ought to discriminate against the standard bred horse as a class; that he ought to have just the same show as any other class.

Mr. Clark: I would like to ask Mr. O'Donnell if he favors giving three or four premiums, or whether he would make the premiums larger and only make two? If you had a certain amount of money would you give that amount in three premiums, first, secand and third, or would you advise giving it in two?

Mr: O'Donnell: I would say three. That would be my suggestion. Mr. Clark's suggestion brings up another thought to me, and that is that in making these classifications it has been my experience in talking with the men that have been showing that most of the men appreciate the drawing out of premiums further down so that the third man will get something to help him pay his expenses. These men appreciate dividing up the premiums and making more classes. For instance, I just think at this time of a good many fairs where they offer first prizes, second prizes and a ribbon for boars one year old and over. Now Mr. Schug from Strawberry Point, whom I see sitting in the back part of the room there, will realize that we cannot do it with a Chester White yearling boar and I feel that the hog man would be better saisfied if ten dollars were paid, to pay five dollars on the aged boar and five dollars on the yearling.

Mr. Schug: I think four years ago this Association sent out recommendations such as you suggest and at that time we revised our premium list and we have now got a class for nearly all the breeds of horses and cattle that are any wise prominent in the country; and do not think of offering sweepstake or championship for dairy or beef stock, nor do we for roadsters or draft horses; nor do I think any fairs of any prominence in the state have continued that.

Mr. O'Donnell: There are a good many of them. It is a good bit like some of the men going out to judge live stock. When you stay at home and see your own stock only you imagine when you go to the fair that you have the best stock going. So, when we get out to a county fair and find out what we have to judge and there are a good many breeds in the same class we feel that the managers do not really realize what their premium list looks like until they see some other live fair.

Mr. Pickard: Don't you think where you give three premiums it is advisable to give a first and second premium and a ribbon? Perhaps worthy of mention following that.

Mr. O'Donnell: It is quite good for this reason: You men realize that when a stock breeder is out for several weeks, after he has finished up, I care not how successful he has been, it is going to cost him money to run that herd for several weeks. The benefit is not the money he gets, but the advertising. As the gentleman said, the object of the state aid is the improvement of live stock and agriculture. To get a couple of honorable mentions below the fourth or fifth place means a good bit to the breeder, because it means advertising for him.

Mr. Pickard: To give you an instance of that, here at the state fair in the case of a man showing colts. Of course they could get no premium as they happened to be just outside of the money premiums, but got a ribbon and it was worth just as much as the premium.

Delegate: Do you expect to get out some sort of a sample premium book?

Mr. O'Donnell: Our plan at the present time is to have this thing ready as soon as we can in the spring so that the fairs can have it at any time. In addition to that I think we will have in different places in the book, a place to designate, for instance, championship, etc., so that the secretary in looking that over will get ideas, and in addition to that a sample premium list in the back of the book. Our short course work ends about the first of March. The three people that have been assigned on this work are all occupied in short course work. There will be something up to the latter part of March or to the first of April. Would it be early enough?

Voices: No! No! No!

Mr. O'Donnell: How many feel that it would be desirable if we could get it in February.

Voices: That is right! That is right! January if you can.

Mr. O'Donnell: It will be practically impossible in January as one of the men assigned to this work is in bed sick with the typhoid fever.

In addition to the grain and live stock work we will also have some suggestions in domestic science work. Mr. ——— tells me the domestic science work has helped them at Waverly. Are there any other questions

I thank you gentlemen for your attention.

H. G. VAN PELT'S LETTER ON DAIRY CLASSES AT COUNTY FAIRS.

Secretary: Mr. President and Gentlemen: I have here in my hand a letter from H. G. Van Pelt, secretary of the dairy cattle congress and Iowa dairy associations at Waterloo. The first part of it is of no importance to you people, and he expresses regret in not being able to be present with you today, etc. He says further:

As you are aware, the Shoemaker-Van Pelt-Mayne Co. last year made an attempt to do what they believed would help advance the dairy interests over the state of Iowa. We spent a lot of money preparing two very excellent show herds of Jersey cattle, with a view of exhibiting them at county fairs throughout the state, that farmers in all sections would have an opportunity to study type and characteristics of animals capable of producing from 400 to 700 pounds of butter in a year, in contrast with the average Iowa cow, which is milking 140 pounds of butter per year.

When we did this we wrote the various county fairs for their premium lists, only to find that, with the exception of a very few, the dairy cattle were discriminated against. Very favorable premiums were offered for beef cattle. Even provided we would have won them all, they were not sufficient to anywhere near pay the expense of the herd while on the road and at the fair.

A few of the more progressive secretaries, including yourself, made special arrangements so we could show these herds at their fairs, with a result that, by shipping all over the state, we were able to pay approximately 75% of the cost of exhibiting these herds, without regard to the cost of fitting them for show.

If the secretaries of the various county fairs would offer as large premium for dairy cattle as they do for beef cattle, then many breeders of the various breeds of dairy cattle could afford to show their herds and accomplish more for the advancement of the dairy interests of the state of Iowa than through any other manner.

The secretaries of the fairs of Iowa have this within their control, and those who wish to do one of the big things for a greater and more permanent agriculture in Iowa can do so by revising their premium list as I have suggested.

I realize there are several of them who will not consider doing so, and others who would like to have boards of directors that will make it impossible. These, however, are merely instances where those in control of premium lists have never given any consideration to the qustion of better dairying in Iowa and what it means in rendering permanent our agriculture as it exists today. They are not aware of the fact that the dairy industry in Iowa is not alone one of her greatest industries, but, without doubt, the industry that brings the greatest profit to the farmers of Iowa and is the one industry that tends, more than any other, to maintaining and building greater the fertility of Iowa farms.

As a matter of fact, Iowa is one of the three greatest dairy states in the United States. The 506 creamery concerns in the state of Iowa receive milk from 103,319 patrons, milking 687,564 cows; 240,347,153 pounds of milk and 256,661,863 pounds of cream, from which was made 92,865,921 pounds of butter, which sold at an average price of 31.78 cents per pound, netting a gross return of $29,413,902.27.

When the fact is called to mind that there are 195,000 farms in Iowa, and that 103,319 of these farms supply milk to creameries, regardless of those who take their milk to condensories and cheese factories, or ship their cream just over the line to other states, surely the fact must become impressive that our county fairs should make a strenuous effort to do their part in helping to advance this great and rapidly growing industry.

Were these farmers who are bringing an income of $29,413,902.27 to the state of Iowa from milk and cream alone, regardless of what they are doing by way of raising cattle and rendering fertile fields of Iowa, doing anywhere near as well as it is possible for them to do, then it would be excusable for the secretaries of the county fairs not to put forth a special effort. But the figures I have given indicate that the average cow in this state is producing less than 140 pounds of butter, when she should be doing twice as much.

The consensus of opinion has brought about the conclusion that two things are necessary for doubling the production of the Iowa cow; first, care and feed; second, better cows.

Strenuous efforts are being made in all parts of the state to encourage both of these factors. However, I am prepared to say to you, Secretary Rigby, that no organization is in so good a position as the county and district fairs of this state to encourage the milking of better cows more properly cared for.

Furthermore, I am in a position to say to you that if the fairs will revise their premium lists so that the dairy animal will be offered prizes equal to those offered for beef cattle, and reasonable efforts be put forth on the part of the secretaries, every fair in this state will, within the next year or two, be able to present to the farmers interested in dairying, who would attend, very excellent herds and specimens of the five great dairy breeds.

Casual observation alone renders impressive the fact that interest in dairying and better cows on the farm is rapidly growing among the farmers of Iowa. The local fair that is to continue securing the support of the leading farmers in the community where it is held must recognize this fact and do its share, as it has in the past, in behalf of advancing and rendering permanent Iowa's agriculture, which is her greatest asset.

Don't misunderstand me, Secretary Rigby, I am not saying a word in discouragement of the local fairs, or what they are already doing, because my experience leads me to know that these fairs are among the greatest of promoting factors. I merely want to call your attention, and the attention of the secretaries of the fairs, that we are, in many instances, overlooking an opportunity to do great good.

I know you see this matter exactly as I do, and I know the dairy breeders of Iowa will unanimously thank you for your assistance. Yours sincerely,

(Signed) HUGH G. VAN PELT.

I might say in connection with this, I got this letter just a little while ago, and had not read it over, but along the line that Professor O'Donnell has talked and some of the remarks that have been made here, I might say that one of the greatest advantages of uniformity in our classification of premiums would be to enable a man to make up a herd and go from one fair to another and make the circuit, and know that he is not carrying any dead stock with him. And I am sure that the department at Ames will be able to furnish us with the bulletin Mr. O'Donnell suggests along this line early enough to be useful that it will result in a great good to the Iowa fairs.

Chairman: The next will be a paper entitled, "The Cedar Valley—A New Comer," by H. S. Stanbery of Mason City.

THE CEDAR VALLEY—A NEW COMER.

BY H. S. STANBERY, MASON CITY.

Mr. President and Gentlemen: First, I want to thank the officers for giving recognition to the Cedar Valley Fair and placing us on the program at this meeting. I feel incapable of saying anything here that will be of interest to you. However, as I understand this association, it is more for the purpose of an experience meeting and getting together and exchanging ideas. If you will excuse my blushes and forget anything I may say in the way of bragging over the fair I was connected with this year, I will proceed to state, briefly, what was accomplished by the Cedar Valley Fair this year.

The Cedar Valley Fair was organized, or it was conceived that a successful fair could be held in the district where it was organized, which was in Black Hawk county, between Cedar Falls and Waterloo, and last spring, I think, along the latter part of February or the first of March, an organization was perfected there, consisting of business men of Cedar Falls and Waterloo and a few farmers. A track was built, an amphitheater was constructed, a nice tract of land was chosen, by the way, about a mile and a half from the city of Cedar Falls, and within access of Waterloo (about four miles, I understand, from Waterloo), on the Interurban line. The time was getting late and the fair was planned, of course, for last fall, and was held there at that time, and it meant a lot of work. The track having been built, and the amphitheater practically completed, there was a little change of management down there on the

27th of July. I went down there and took hold of it. Mr. Holcomb preceded me in the work there. The buildings were all to build. We planned what was constructed and, I want to say, by the way, that the improvements on the grounds there meant an aggregate of about $43,000. This is a pretty good improvement for a new county and district fair. The entire investment, including the land, amounted to a little over $62,000, in the land and buildings. When we got our buildings built and ready for our fair, it started, or opened up, on Saturday, which was an unusual day for a county or district fair to open on. I guess the Cedar Valley Fair is the only fair outside of the state fair that has opened on any other day than the first day of the week—Monday or Tuesday. We opened up on Saturday and the elements were disturbed and bad weather set in and remained with us throughout Sunday, Monday and Tuesday, which precluded any large attendance on those days, and it did look very discouraging to us at that time. However, we were persistent and felt sure that Dame Fortune would smile on us the latter part of the week, and she did, and, on Wednesday, Thursday and Friday, we had an attendance that was remarkable. Our total attendance at the fair down there for the six days was 36,234, the attendance being practically all the last three days of the fair, Wednesday, Thursday and Friday.

DISCUSSION.

Delegate: You planned a six day fair did you?

Mr. Stanbery: We planned for a six day fair. We commenced Saturday and closed Friday night the following week.

In the fair organization down there,—I don't want to take credit for doing all of this work myself, because I did not. I only did a very small part—I want to say that no county fair, district fair, or any other kind of work can succeed without proper organization. I want to say that the men connected with the fair down there are certainly the biggest and best bunch of boosters I ever became connected with. Every one of them on the job and every department took as much interest in the fair as I did myself and they put in a lot of unselfish work both before and after the fair and it was through their cooperation and through their efforts and work and organization that we were able to hold a fair there with such remarkable success considering that it was our first fair. Our net profits after all bills were paid were right close to $2,000, $1,956 to be accurate. We went into it rather heavily and took some chances; in fact, took a lot of them. Our free attractions alone cost us a little over $4,000, not counting the prizes in horse racing. Our prizes for horse racing were $3,500 or $3,600 in addition to that. Our total receipts were nearly $13,000 during the six days of the fair. Our expenses were a little over $11,000. I think Mr. Mullen, or some one who has preceded me, has referred to the advertising,—the automobile proposition in the way of advertising.

Delegate: Would it embarrass you any to tell us what your free attractions were? You say you put $4,000 in it.

Mr. Stanbery: Yes; I will later take that up. I have no doubt as to the automobile proposition that was brought up by Mr. Mullen. He suggested that these fairs get this list of automobile owners from the state and mail this advertising matter out within a radius of thirty or more miles of the point where they were holding the fair. I want to say that we got this list and I mailed out in the neighborhood of six thousand, one to each automobile owner within a radius of sixty miles from Waterloo and Cedar Falls. In this circular I enclosed a free ticket to the driver. We got in direct returns over fourteen hundred tickets; that is, over fourteen hundred machines came back in response to this invitation and those that brought tickets were admitted at the gate and it was supposed every one of them brought a load. We hope they did any way. We found that was a very satisfactory way of getting results; one of the best advertising mediums that we had. In addition to that, someone spoke of pennants. We bought a thousand pennants and gave these to automobiles and owners all around that territory down there and found that to be a very favorable advertising medium.

Now I will answer that question. What was it?

Delegate: In regard to the $4,000 you put in your free attractions.

Mr. Stanbery: I wish to say this: We spent a lot of money in attractions for reasons that were probably best known to ourselves only. We were up against a very serious obstacle down there. There were elements against us and there had been things that had preceded us there that gave the management rather a black eye and we felt that we had to make good; had absolutely got to do something or else the people would come there and go away and not come back again. Now, if I may explain as to what we had I will say one of the things was an aviation feature by Mr. Thompson, who flies under direction of Mr. Beachey, and does the same stunts as Mr. Beachey. That is an expensive attraction but proved very satisfactory; it brought a large crowd. That cost us $500 a day. In addition to that we had booked with the booking agencies a vaudeville that cost in the aggregate $1,800, and we had some extras besides that made a total of about $4,000.

Delegate: Don't you regard that as rather an excessive amount?

Mr. Stanbery: I regard that as rather a large amount, and yet I am of the opinion that no fair can succeed unless they make it high class and give the people a good show. If you give them a good show they will go away and come again next year. I don't know as I would be in favor of spending that much in attractions another year.

Now another matter that I wanted to bring up here is the matter of concessions. That is the thing that we all have a lot of grief with. I know we did last year. We booked in the neighborhood of $2,600 worth of concessions on our own grounds and when we collected I think we got something over $1,400 of the $2,600. Of course all had the hard luck story, it rained, etc., and, as a matter of fact it did for two days. Some of them jumped the contract; others didn't jump but they didn't have any money to pay, and when we added up our total collection we had considerable less than we should have had from our concessions. To be exact, we collected $1,485. Now, here is the point I wanted to bring out at this meeting, that I believe that concession matter can be improved by the fair secretaries in this way: if every fair will agree to compel every fellow to pay a certain price and when he comes on the ground that we get it in advance we will get better concessions and in the long run get along better, and everybody will be better satisfied than if we let every Dick, Tom and Harry come in with a hard luck story and make a payment of two or three dollars. In this way we lose a lot of money and it lowers the standard of the business.

Now anyone having any questions to ask on any point that I have not covered I will be pleased to answer it if I can.

Delegate: With reference to your extending invitations to the automobile owners; did you include the owners of your own county.

Mr. Stanbery: We included the owners of our own county. We had to do that. The board when they first talked the matter over, thought we would preclude the sending of invitations to local fellows around Cedar Falls, but after further consideration it was decided that some fellow might drive up behind one of these fellows that had a ticket and say to us "why didn't you give me a ticket." So we made it universal to all.

Delegate: You spoke of the number of tickets you gave out. Did you have any check on that; on the additional number that was sold by reason of that stunt?

Mr. Stanbery: No, we didn't have any check on that. We had no way of getting a check on that without having somebody at the gate.

Delegate: Do you expect to do that every year?

Mr. Stanbery: Of course that would wear out after a time. You can't work those things continually or expect to keep them up.

Delegate: How much do you charge at the gate?

Mr. Stanbery: Thirty-five cents at the gate and twenty-five cents for the amphitheater.

Delegate: Do you give this ticket for one day or during the whole fair

Mr. Stanbery: It is good for just one admittance.

Delegate: Don't you think you could figure on three tickets for every machine?

Mr. Stanbery: I think we could figure three tickets for every machine that was on the grounds. Our largest day as I remember the returns, well, there couldn't anybody get there until Thursday and I think our principal returns were on Thursday.

Delegate: Were they good for any one day?

Mr. Stanbery: They were good for any one day.

Delegate: Did you charge other days for automobiles and teams.

Mr. Stanbery: We charged for automobiles the same. The farmer that has a team and who drives to a county fair is a kind of an obsolete institution and ought to be entitled to five tickets.

Chairman: The next thing on the program is "The Speed Program—A Free For All." Horsemen and secretaries. Now we will have to make this a Methodist love feast but do not take up too much time.

General Discussion.

Mr. Joe McLaughlin, Marshalltown: Coming in here a fellow said to me, "I saw a lot of automobiles and Fords coming in." I said "yes." He says, "It is a great invention, this coming to fairs in your own cars." I said, "It is a pretty nice thing for the fair but then the greatest invention is the wheelbarrow." He said, "Why?" I said, "Because the wheelbarrow first taught the Irish to walk on their hind legs. You know I am prejudiced as much as any man ought to be because I was bred in Ireland myself. I would like to hear from Mr. Bradley, the gentleman that has more money than he can take care of. I know that Rock Rapids is the best place in the world in the way of horse racing and I would like for Mr. Bradley to tell us about it.

Mr. Bradley: We aim in our fair to have everything the very best possible. We put up $400 purses, and had a large field. I think our average net amount for races was about $2,100 or $2,300 and we put up for about $4,500. We cater strongly to the race end of it and aim to have everything equal to it in high grade, and our premiums for stock have been as good as we could afford to make it. But our stock exhibit has not been very heavy. We are very anxious to have the Ames college devise some lines of premiums so we can get stock, but the stock is not in the country. However, our greatest trouble is not that we haven't the stock but it is the jealousy between the farmers. They won't come in because they are afraid the other fellow will beat them out. I don't know if there is anything further to offer; only one thing and that is we have been spending so much time to get this money. I have been trying to get our secretary a little money and give him his time to run the fair. He can get out and in a day's time he can get more money than any sum they will pay him. The secretary can devise some little scheme, advertising in the fair catalog and make $500 or $600 and in that way we can make our catalog pay us $600 or $700 and leave us our straight program. My idea is to pay the secretary that $300 or $400 or $500 a year—give him all of it; don't get anybody else in it but pay him all of it and make him responsible for the whole thing. The only thing we do with the board of directors after the fair is over is to tell them how much money we got. The secretary is responsible for the whole thing. We usually get $24,000 to $25,000 together. I believe if you pay one man and pay him a fair salary and let him take an automobile and go out all over the country and get this hurry business we will have a great success. I believe in Minnesota they pay twice what they do in Iowa but I do not know of any fairs in that state that are in any way as good. I think they just depend on the state appropriation and the farmer brings his old cow in and gets his premium on that cow and goes back home. I don't believe there is a county in the state of Iowa that if they got the right kind of people back of the fair they will be ahead at the end enough to pay all the premiums and satisfy all the people that would go to the show.

Mr. Rigby: I would like to say a word in connection with some letters I have received from secretaries in various parts of the state suggesting topics for discussion. One of the topics suggested was that of conditional entries. I did not dignify the subject with a place on the program for the reason that it is contrary to the rules. It is along the same line as declaring all bets off at a fair where there is no betting. I think it is a safe thing for any secretary here to get up to discuss that topic. I don't believe he would get into trouble by doing so; but I believe there is something to be said on both sides of the question. It is a thing that can be abolished only by a majority of the fair secretaries. I am not going to discuss the subject myself because there are those here who have grievance along that line. I have none myself, and suggest it because it has been suggested to me.

And there is another topic, too, that there can be something said on and that is in regard to the—well, we might say ''Best Speed'' program for the average fair. I remember last year in my work in getting up the program Joe McLaughlin wrote me a long letter and he said, ''Even though you have the best program in the world, the horseman would not agree unless it would be the best because the particular stable for which they were training would find the most entries. I think the contention between the horsemen and secretaries in regard to speed program is due to not having a multiplicity of classes, with $300 or $400 purses. Now, these are simply remarks by the way of suggestions, and they are topics worth while for us to discuss. We have a little time for that purpose and this is a free-for-all and we want to get into the game. We don't get together often, and when we do we want to do the best we can. I think any fair secretary that has had the amusement side or the entertainment side in discussing this matter would agree with me that the racing side is the main part of the entertainment program. It must be so; and the question before us now is how to make the speed program a success; how to get the horses, and this question of conditional entries can well be discussed at this point.

Mr. Shipman, West Liberty: There is no such thing as conditional entry. An entry that will allow a man to start if he wants to and not pay if he don't, can't do it. An entry that will allow a man to start if he wants to is one that the secretary can collect on if he wants to. I had a little trouble with our board of directors a few years ago along that line—not very much trouble, but a little. They took me a little bit to task for something I had done. I told them that was one thing they expected the secretary to do, was to build up the races and that I would have to have my own way of doing it; that if I could not, somebody else would have to do it. That I would not try it if I could not have my own way about it.

In the matter of the best program, I think it depends a good deal on local conditions; maybe not exactly local conditions, but the surrounding conditions. You must do the best you can with the money you have to spend. Of course you have to take some chances. One of the things that I think a secretary should do, or rather the board of directors, they should appoint a good superintendent of speed. One of the big mistakes is to appoint a local horseman as superintendent of speed. He would usually get the blame for things that maybe didn't belong to him; but it is poor policy to adopt a plan of appointing a local horseman as superintendent of speed. I don't believe there are very many fairs in the state of Iowa that can stand great big purses. I would rather take my chances on more classes with smaller purses than on a few classes with larger purses. I believe I'll advocate this year with our board of directors a plan something like this: make an entrance fee of 1%, but I would make that entrance fee to all horses no matter if they let a man enter as many horses in the race as he wants to but make him pay 1% on every entry. I would make the entries close sometime, say a week before the fair, and maybe ten days. I would charge an additional 1% to start with, that will make 2% for the starters, then I would deduct 7% from the horses that win first money, 6% from horses than win second money, 4% from the horses that win third money, and 3% from the horses that win fourth money. That might do to try. You can try most anything once. We have a fair that pays considerable attention to the speed end of it but we also pay just as good attention to all other departments. We find it pays to do this, but we have got to have the races all the time.

Mr. E. G. Manbeck, Des Moines: Mr. Chairman: I would like to ask the president and directors of county fairs what an invitation amounts to to get a majority of the farmers to attend the fairs. I guarantee if they attend the fairs they will see the races. Now, from my experience; my father lived here in this county until eight years ago last June. The year I was nine years old I was big enough to plow. We came home from town one evening a couple of months before the fair and he said, ''I saw one of the directors of the fair today,'' and he said, ''we must be in there with our stock,—horses, colts, hogs, sheep and cattle.'' Of course we had an invitation to come to the fair. We didn't ask what premiums they were going to pay. We were glad to work and get these colts, etc., all ready by the time the fair commenced, and we had a nice male animal, five or six sheep and we loaded up in a big wagon some corn and took a little grip and came to the fair, and we did not come for money but to show the people what we were raising. It was big advertising. My father brought two big black mares to this country with him. One of them raised thirteen colts and the other nine. Our advertising at the fair sold all these colts that we wanted to sell. Now, for example, down here at Pleasantville, at the county fair there were 126 horses and colts in the show ring. They asked me to come down and judge for them. I know a little bit about judging at a county fair. When a man judges horses at a county fair and gives a premium to a colt the rest of the horsemen would like to know why he gave that premium. Very well. There were twenty-five of these horses brought out in the show ring. Every colt was entered in the draft class. I looked them over and I said there are about eight or ten draft horse classes here and the rest of you fellows will have to wait until I come to the road class. I picked out those draft colts—worked them down to five. One fellow there says: ''We've got him stuck now.'' Finally I picked out a colt. The other fellows all said: ''We are satisfied, but we want you to tell us why you gave that colt first premium.'' I said: ''In the first place he is the best colored one.'' And they would say, ''That's so.'' ''He has got the finest hair on him.'' ''Yes.'' I said, ''If you are going to buy one of these colts for $500, which one would you pick out?'' They were all satisfied. I went through those 126 horses and every man donated his premium right back to the association.

Now you have got to send out invitations so that you will get your bookings before the fair commences. Every business man in the county should send out invitations before the fair for their customers to be sure and attend the fair and every man that comes in town say to him, ''Here, we are going to have a fair and you want to bring in some butter, and some poultry, and some produce and your live stock,'' and you will find they will do that. For instance, if I had not had an invitation to come down here, I would not have come. I got two of them. Now, if you directors that live in small towns will get your farmers interested they will bring this stuff in and help make your fair a success.

At Greenfield there is a man who has a fine lot of hogs. He says, ''We didn't get much of a premium, but premium is nothing to me. I have sold $175 worth of hogs since I came here today and I don't care for the premium money.'' Now, if you get the farmers interested in that way they won't be looking for money. If a man works all summer and can't spend one week at his county fair, he is not interested in it; but if you can get men interested to attend the fairs to advertise their stock the farmers will turn out.

Another thing; they used to offer premiums for plowing matches. When I was a boy thirteen years old, I saw an ad to the effect that they would pay $4 for the best boy plower. I said to father, ''I am going into that plowing match.'' I said, ''I am going to enter the plowing match and also the man's plowing match.'' Well, all the boys found out I was going to plow that day and were all in there to see me do it. Now this is advertising. If you can get different people interested in the neighborhood to bring in their stock, the farmers of that community will be sure to turn out. I think this plowing match business is a great thing and I think it ought to be held at every country fair. Well, I went out and plowed and drew first premium in the boy's match. They called for men in the men's plowing match and I got out with the men's team. Four of the men passed up and said, ''We are not going to plow against that boy.'' I went in there and got an $8 prize. That made me feel pretty good I assure you. So everything of that kind adds to your fair. It is not the money they go there for, but for the interesting things they will see.

Now about the speed program; there is only one way to race horses, and that is the way they have up in the country. They have no rules for starting. Some say it is a cruel way, but I want to say that they are not half as cruel as these three-heat races where thirteen or fourteen horses are starting and jockeying sometime before they get started so that the old-fashioned race like we had fifty years ago, is the only way if people want to get something out of it. It is not the horse of one mile or two miles but the horse that can go out and win on the strength of his constitution.

Now another thing, you go to work and prepare a horse for a race. You spend $25 in getting the horse ready. You bring him out to the fair and they will tell you how to win the money, but I paid $25 and I am the man who knows how to win that money. I am the man that ought to have the privilege of winning that money. It is not the fellow up in the stand. I know a fellow in Tama county, we fined him $10 or $15 because his horse beat. You don't want that kind of men in the stand. You want men in the stand that know the race business. I think I know how to win myself and I don't want a man up in the stand to tell me how to win a race.

I want to say that there is more interest taken this fall in the fairs I have attended than in any previous year. In Greenfield it rained Wednesday, Thursday and Friday. The judge said, "Come out boys, and if it don't rain we will race tomorrow." I said to the boys, "I know this president and he is game; we will just stay." Next morning about ten o'clock it quit raining and cleared up and the telephone began to rattle and they came in from thirty miles, some forty. Well, the track was not good, and the question was what should we do. I said to them, "get as many automobiles as you can and let them run slowly over the track," which they did and it helped it very much. We raced Friday afternoon and Saturday afternoon and raced the program out, except one race which was not filled. There was squabbling as to who was to pay this back entry, this blind entry. It was said that the man who won first money ought to pay that and they could not agree and the judge just filled out his own check and said, "go on." Now that is the way if you get men interested, that race horse end of it will take care of itself.

Mr. Pickard: Mr. President: We have quite a number of horsemen here and I would like a little information along the line of classes that would suit; that is better; especially with regard to early closing. Now we have up in the big eighth district this year two six hundred dollar purses and trotting purses and a pacing purse throughout the whole circuit. We closed the entries on the 15th day of May with a half of one per cent, that was $3, then the first of June there would be another one per cent due, the first of July another, and then the day they start another one per cent was due. Our idea was that by giving out a half of one per cent would be only $3. We supposed that there would be a lot of entries there, but the man would give $3 to get in there to see what they were. We had a part of a circuit barely filled; instead of getting as many as they did here at the state fair we only got five or six entries. I would like to hear from others in regard to this matter of early closing.

Mr. White, Malvern: I have not thought much about making any talk in regard to this matter, and as far as the classification is concerned it is an awfully hard thing to say anything. Last year at our fair I got a good many letters and if I had changed the classification according to the wish of the horsemen I would have had more races than we could have taken care of from now on to the time for the next fair. And it is hard to tell what classifications to put up. But I would think to catch the most of them in the pacers' race it would be best to place it, say at 25, at 20, at 15, and three at 10 or free for all.

Mr. Pickard: More particularly on early closing it seems like the larger entries in the early closing as a rule are the green classes. More green horses start out, fellows starting out take more chance on them, than they will if they have tried horses. That is the way I look at it.

Mr. Clark: Mr. Rigby in his talk in reference to the fair at Marshalltown was referring to me when he spoke of the final entries. I want to tell you of a little experience we had last fall. We had two colt races. We had one of the nicest letters from a man over in Illinois desiring to make an entry but the letter said: ''This colt is sick this week; if he is able I am coming.'' About Sunday or Monday, the week of the fair, we got a letter saying his horse was still sick, and he could not come. He was awfully sorry, but to keep his name on the list and send him entry blank for the next year. I had a hunch that the fellow was lying to us all the time, so I kept watching the papers and I found out he was racing over in Illinois at the time he wrote us the last letter; that he was racing the week of our fair. And the week after our fair and after that I did not keep track of him. Now when our secretaries run up against a proposition of that kind, some may be better natured than I am, but it does rile me up. If anything riles me it is make an entry list and when a horseman gets our list and finds out he does not stand much show he concludes he does not desire to show there and hikes off to another town and wins a race and if you write him about paying his entry fee on the list he is thoroughly offended. I don't like that. My intention is when our next entry blanks go out there will be printed on them in good bold type, ''No additional entries accepted.''

Now this getting up of a program—I think it is one of the hard things to determine. You have not only got to have a good race program but you have got to have something to go with that. We have got to have two classes. About 60% of the people want to see the races, and want to sit in the grand stand. Others want to see free shows or the automobiles or bicycle races. I believe in order to make a popular afternoon entertainment that will draw the people that if you have a good race program you have got to have a good amusement program to go with it. Mr. O'Donnell said, ''The great question was as to just where the dividing line should come between the free attractions and the show of stock'' or words to that effect. Now I think that that is easily answered. If you get a good line of free attractions and a good line of good races and have a grand stand for the people that want to get in there and see those attractions the whole trouble is solved and the track will take care of itself. Now this last year we spent a little less than five thousand dollars, I think four thousand nine hundred and sixty—in actual money paid to horsemen and to free attractions, and when we struck a balance that whole thing had cost us less than one hundred dollars. The entrance fees received on the race horses, the admissions to the ground after four o'clock in the afternoon came within one hundred dollars of paying this five thousand dollars expense. I don't believe there is a fair in the state of Iowa that has got a good race track but that can make that track pay for all of the entertainment there if they put that track in shape.

Mr. Shipley: Mr. President—One matter brought out by someone in regard to the early closing of entries. We have had a little experience of early closing events, especially in poultry, and I believe I have had enough experience that I believe I will pool the classes the same as the races do. I can't see where the county fairs and the district fairs are making very much of a success with the early closing of races, that is, as a racing proposition—as an entertainment. I would like to hear from some of the gentlemen on that point, and especially I would like to hear from some of these horsemen as to the early closing event.

Mr. Anderson: Mr. President—In regard to the early closing event in some places it is all right and in some places it is not. Where one county fair is by itself not in the circuit it is pretty hard to fill an early closing stake, for we have to ship that horse off by itself, but I think most of the stakes close too early.

Mr. Allen: What do you know about the early closing event, Mr. ——————? I was going to ask a while ago in reference to the attendance, whether from the horseman's standpoint they prefer to have fewer classes with larger purses.

Mr. McLaughlin: That depends entirely upon the size of the man's stable. The man that has a good many horses would rather have a larger number of events and smaller purses. But instead of more classes I would say more purses.

Mr. Pickard: Mr. Clark was complaining of the man who would make an entry and then would not come to fill it. There are always two sides to this question. A man may enter there and in the course of a week receive word that the class did not fill. He is out a week of time and no place to go. And so the horseman has his grievance as well as the secretary.

Chairman: Now gentlemen you will notice on the program different subjects for general discussion. If any one has anything to bring up this is the time. Free attractions, special premiums, admission fees, season tickets, exhibits, industrial, agricultural, individual, township. school, concessions, pay show, night program, advertising methods, and races and entry fees.

Mr. Mitchell: Mr. Chairman—There is one or two things that I would like to find out. I would like to know what you think about automobile races.

Mr. White: I was going to say in regard to our experience in automobile racing, if you want to put on an automobile race you have got to do it after the other races are over, because if you have automobile racing the track is about done up for a week.

Mr. McLaughlin: I don't think that there is any track outside of Des Moines that is safe for automobile races. You have parks you can go to, and you are liable to damage suits at any time resulting from these automobile races.

Mr. Mitchell: I will give you my experience. Last year we decided to have one day an exclusively horseless day. That was all the attractions we had. We gave an automobile away—it was not a Ford, either. All the attractions we had were automobile races and two mule races. And we had two thousand more people attend than on any other day. We didn't know exactly whether the attraction was the mules or the automobiles.

McLaughlin: They were disappointed because they were expecting somebody killed.

Mr. Pickard: The greatest objection I see to the racing of automobiles on a half mile track is a good deal like the Irishman in the running races, who said: "I don't know whether it is the last horse in the first race or the first horse in the last race."

Mr. Bennett: We don't have any automobile racing at our fair. We think they are too dangerous to have at a county fair.

Mr. McLaughlin: They are all right as attractions, but are not safe.

Mr. Schug, Strawberry Point: Two years ago we had an automobile parade. We did not advertise a race, but there were some thirty or thirty-five cars on the track and among others were some deacons with their wives and children. And before they got four times around the track they were going thirty-five or forty miles an hour and we had a dickens of a time stopping them. It nearly turned our hair gray. If there had been an accident they would have been piled up and possibly there would have been a half dozen killed. We stopped them and we will allow no more cars on our track.

Mr. White: We advertised some races, a colt and poultry show and we got rained out twice. I was determined to have it. We had advertised it before the race was to come off and about the fifth of November. That is the very busiest of our corn husking season, and we had a line of children twelve years old or more and we had an automobile parade and had a little over twenty-one hundred people in this parade. We had an automobile-motorcycle race and I think we have one of the best tracks outside of Des Moines. Yet while we have a good track, we had one automobile run off the track and into the fence and turned over three times, and nearly killed three people, and we felt that there was going to be a lot of people killed. The driver undertook to pass the car ahead of him, and go around it, and he crowded one car off the track and we had to divide the crowd—they were thicker than a drove of sheep—and we had a hard time in getting the automobile out of the way in order to let the others through. That is the experience we had with automobile races and I do not think we will have any more of them.

Mr. Clark: Mason City has thirty thousand dollars in law suits pending today on account of automobile races. However, I will say this: It was largely the fault of the association. We have not had any accident, and I think if we all took the proper precaution we could confine the damage to the men that participate in the races. I understand, Joe McLaughlin, this fall when you had motorcycle races you walked up to one of your men and warned him to be careful and said to him: "We don't care a damn for you, but don't kill anybody that knows anything." I think if we are properly guarded on automobile races that we could eliminate the danger connected with it. We had automobile races the last day at Cedar Falls this last year and they were very successful. In fact the last day was the largest day we had in point of attendance. I don't know whether it was on account of the automobile races or whether it was the horse racing. You know I am speaking here to horse racing men but if we took proper precaution to guard our fences and prepare for automobile races exclusively I think we could confine the danger to the parties participating therein and as Joe McLaughlin says: "We don't care for that; that is what people pay their money for to see them get killed." If they should kill themselves that is what they go there for anyway.

Chairman: Gentlemen, if there is no further business, we will stand adjourned until the banquet tonight at 6:30.

The business session held in the evening was preceded by a banquet at which President H. C. Leach of Bloomfield presided. Addresses were made by Governor George W. Clarke, Mayor James R. Hanna of Des Moines, and Hon. T. E. Taylor of Independence. Following the banquet the business session was held, the proceedings of which are given in the following.

REPORT OF SECRETARY AND TREASURER.

BY A. G. RIGBY, INDEPENDENCE, IOWA.

Mr. President and Gentlemen of the Association: Before reading my report, there is a remark or two that I wish to make.

I have acted in the capacity of secretary of this association for a number of years, and we have tried to carry on the work of the association the best we could with the funds at our command. It has not been the purpose of the association to accumulate money, and it has not done so. However, we have kept within our means, and the way the matter stands tonight we are not overdrawn. Last year it was suggested that we increase the membership dues this season from $4 to $5. We did so. And I have this to say, that if the work that is possible to be done in an association, the benefit to accrue to a township and county, if that work is done, and done properly, that we should have more funds, and I strongly urge the increase of dues of county and district fairs to, say, $10, and, I may also add, inasmuch as I am not a candidate for re-election, that I think whoever succeeds me in this office be paid for the work done. The secretary can earn some money in a job of this kind, and, if he is good for anything at all, he is worth it and should be paid, while if he is not good, he should not be had at any price. I think we should pay a man what it is worth to do the work. Now, the question was discussed this afternoon of the increase of dues in the County and District Fair Association, and the secretaries and presidents here are aware, from the letters sent out in connection with our meeting, that this question was raised. Now, I am sure that there is not a secretary of a fair association in Iowa, who is familiar with the conditions, but who is in sympathy with this move, and it is a campaign that cannot be financed on hot air. Men who are qualified to handle this matter properly should at least have their expenses paid, and, in order to do this, will require more money, and this will necessitate an increase of dues. That, however, I leave to your judgment and, without further remarks, other than to call attention to the fact that out of the ninety-one fairs held in Iowa, thirty-six have run behind financially. I do not have the statistics, but I believe I am informed correctly, and I believe I am correct in saying that, with the majority of them, it was only about a hundred dollars or so—a small amount. Now, if the Iowa fairs received the support of the state of Iowa that they should, for the educational side of the fair, the counties would have been on the right side of the ledger in the majority of these cases, instead of leaving a bad taste. One of the angles to the duty of the secretary of an association of this kind is that the report he has to make has to be gotten up very much in a hurry. Our money comes in at the last moment and we have to make up a statement on the spur of the moment. So it may not be absolutely correct, but as nearly so as it is possible to make it.

FINANCIAL STATEMENT—DECEMBER 8, 1914, 9 O'CLOCK P. M.

Receipts—		
Dues paid by thirty-eight fairs		$190.00
Dues paid by horsemen		8.00
Extra tickets		2.50
Total receipts		$200.50
Disbursements—		
Overdraft from 1913	$ 22.35	
Program preparation	23.75	
Postage	18.85	
Printing	27.50	
Stenographer	9.00	
Slides	7.00	
Total disbursements		108.45
Balance on hand		$ 92.05

Mr. Clark: Mr. President. Following the statement, I have a motion to make, and it is this: That the new fairs that come in be elected to membership of this association.

Motion put and carried.

Chairman: You have heard now the report made by the secretary-treasurer. What shall we do with it?

Delegate: Mr. Chairman. I move that the report be accepted and placed on file. Seconded.

Motion put and carried.

Chairman: Gentlemen—The next thing in order on the program will be the election of officers for the ensuing year. I would like to place in nomination for president Mr. Joe Morton, of Sioux City.

Seconded.

Mr. Chas. E. Cameron: I move that the rules be suspended and that the secretary be instructed to cast the vote of this organization for Joe Morton for president.

Motion seconded and put and carried.

Mr. Morton being called for, responded briefly as follows:

Mr. Morton: Gentlemen—With your co-operation I will do all I can to make this association a success in the future, as it has been in the past.

Chairman: Further nominations are now in order.

Mr. C. H. Tribby. I wish to place in nomination Mr. J. C. Beckner for the office of vice president.

Chairman: Are there any other nominations for the office of vice president?

Mr. John Palm: Mr. Chairman. I move you that the rules be suspended and that the secretary be directed to cast the vote of the association for Mr. J. C. Beckner.

Motion seconded, put and carried.

Chairman: The next thing in order will be the election of a secretary-treasurer. Nominations are now in order.

Mr. Chas. E. Cameron: Mr. Chairman and gentlemen. I would place in nomination Mr. J. Q. Lauer of Waverly, Iowa, for secretary-treasurer.

Seconded.

Chairman: Are there any other nominations?

Mr. C. H. Pickard: I move you that the poll be closed and that the secretary be instructed to cast the vote of the association for Mr. Lauer for the office of secretary-treasurer.

(Mr. Lauer called on for remarks.)

Chairman: Mr. Lauer, you are called on.

Mr. Lauer: Mr. Chairman and Gentlemen—I heard a pretty good story this afternoon by the manager of the Orpheum theater. He put it in this way: "Why is a Ford car like an affinity?" The answer is, "You can have an awful lot of fun if you don't appear in public with them."

I thank you very cordially for this honor that has been thrust upon me. I am like Mr. Morton—I will say, with your co-operation I will do the very best I can. It seems to me from what I have seen this afternoon that if this organization could be organized with some sort of permanence, if there could be a permanent organization having certain rules and regulations and definite ideas that we should all live up to, we could accomplish more. It occurs to me that if we were organized in some such manner, if we had rules to which we should all abide, we would get better results at county and district fairs; but, for my part, I will do all I can to further the interests of the association.

Mr. Clark: Mr. President—At the meeting this afternoon the subject of state aid for county fairs was taken up for discussion and it was decided that that subject be continued tonight. There does not seem to be anybody ready to speak on it, and I desire to offer a resolution, not for the purpose of cutting off any discussion on that proposition, for I would like myself to hear a full and fair discussion of the subject, that the president of this association be empowered to appoint a committee of seven men with himself as chairman, three from the members of this association and three from outside, to have full charge of the subject for state aid for county and district fairs. I make this motion, Mr. President, with this thought: This is an important committee, and, while we have a whole lot of good men in here, if we try to elect a committee here tonight, I don't believe we will have as good a result as we will to leave it to Mr. Morton, the incoming president, to make the appointments after canvassing the available men over the state of Iowa. I have made this motion that he appoint a committee of seven, with himself as chairman, three members of this association and three outside of this association.

Mr. C. H. Pickard: I would like to second Mr. Clark's resolution. I think Iowa is as much entitled to state help as any of the states around it and does not receive nearly as much as some of them do.

Chairman: Gentlemen. You have heard the motion. Are you ready for the question?

Motion put and carried.

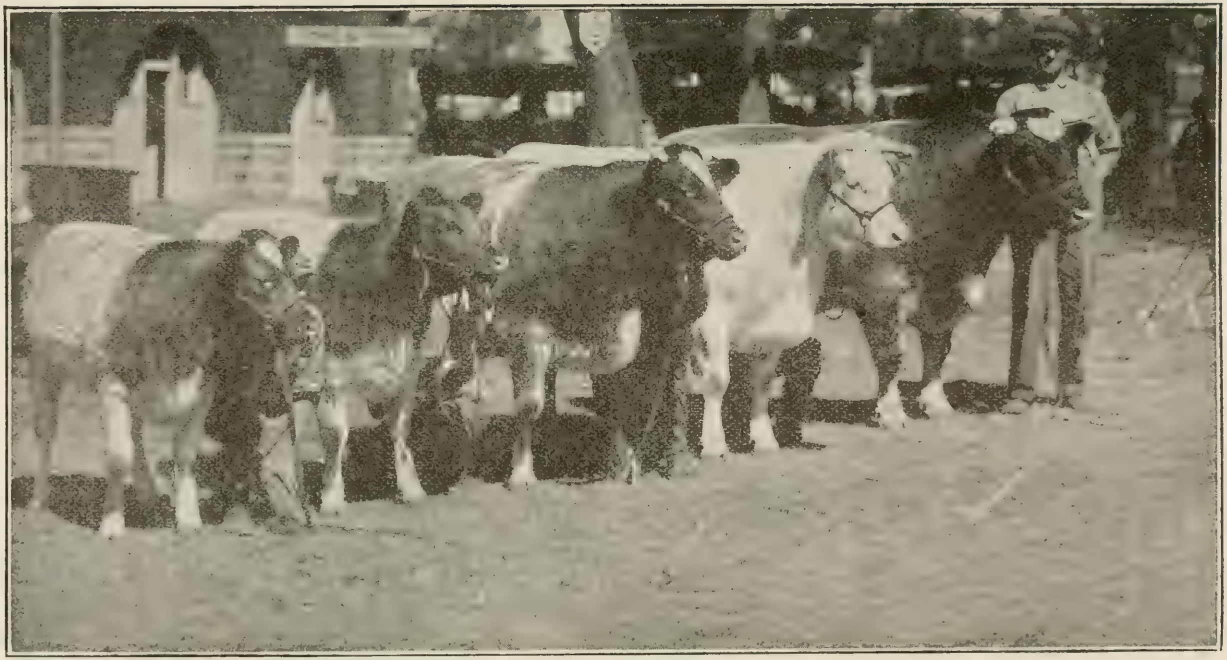
Chairman: What is your further pleasure, gentlemen? That finishes the program.

Mr. Holcombe, of Illinois, was here introduced and spoke as follows:

Mr. Holcombe: Mr. President and Gentlemen—I do not feel like I ought to be called upon, as this is my first meeting in Iowa. Still, coming from Illinois where we have a law, I would like to explain to you that law.

The state of Illinois has an appropriation of $85,000. That is put in the hands of the agricultural department to pay to the fairs in the following manner: Sixty per cent of the amount paid in cash premiums, fifty per cent of the second thousand, forty per cent of the next two thousand, and thirty per cent on the balance. Up until two years ago the last year the appropriation was $65,000. At that time through the efforts of Mr. Leonard Small and several others—of course I helped a little—we got the appropriation changed from $65,000 to $85,000. The reason of that was that $65,000 was hardly enough to go around, and after all the fair statements were all in it was very evident that they would have to pro rate the amount, and a good many fairs received a fraction less than they were entitled to. At that time they had a limit of $2,500 for each county. The bill went through without any trouble, and $85,000 is sufficient to take care, I believe, of all of what it is intended to do. The system employed is that they send their statements to the financial chief so as to make a financial statement of the year's business, the amount of indebtedness, if any, the value of the property and so on, and a list of all premiums paid out, who paid it and the address of the one who paid it and the name of the department in which they were paid, together with an affidavit to the fact that there was no intoxicating liquors or gambling allowed on the ground. Those statements must be in by the fifteenth of December, or between that and the first of the year. It makes it very difficult in coming into Iowa to convince some of the people of Iowa how to figure out just exactly how far we can go. The stock raiser and breeder of today is an up-to-date man. He would like to exhibit his stock, and will if he has proper encouragement. I find that very proper encouragement is that they can take the book and figure out just about what he would get out of it if he should get any money at all, and invariably they pass it up. The men devoting their time to breeding livestock today, if they have any kind of chance, they have got to receive some money for exhibiting their stock. And it simply means to the state of Iowa that it is a handicap on their county fairs. The public today expects a great deal for its money, and you have to give it a show that is somewhere in keeping with that demand. If you charge them you have got to give them an exhibition something near commensurate with the charge. Now, in order to show a good, first-class fair you have got to have a book that shows there is enough premiums that these people can come in, and as I said, get at least a part of the money to pay their expenses; otherwise, they will not come, and if they do not not go to the fair you will have a deficit on the books, simply because you have failed to provide for sufficient premiums. You cannot afford to lose them because you are depending entirely on the gate receipts and you can't offer in your book a sufficient amount for their stock for the people to see when they do come. Figuring out the thing as I have had to do both in Iowa and Illinois, it is a serious handicap. The United States government at this time is paying part of the salary for a county expert in Iowa and other states. The state, I believe, pays part of this and the United States government the balance. The United States government realizes and recognizes the fact that agriculture today is the principal thing upon which everybody relies. It is the real foundation, and they are willing to spend their money along these lines. After the county expert has been through the county and the association has influenced the men to take up the more scientific methods of farming if he produces an article either in the way of livestock or in grain, or some articles of agriculture for the county, district or state fair, they have to carry on the work at the original expense of the United States government and they ought to have some help. It is something that can be made a good thing. Another thing, the United States government has lately taken up the proposition of putting in fairs in the Indian reservation, confining these exhibits to the Indians both in agriculture and handiwork, eliminating everything that has not been produced by the Indians. That is, they show that they realize that the fair for the Indians is a good thing in an educational way. And I believe it would not be any more than fair if the movement could be brought about satisfactorily that the state of Iowa would appropriate a certain amount to each fair each year.

Chairman: If there is nothing further, we will adjourn.



Champion Breeder's Young Short-Horn Herd, 1914, Iowa State Fair and Exposition. Owned by J. A. Kilgour, Sterling, Ill.

PART IV

Iowa State Fair and Exposition Press Reports and Live Stock Awards, 1914

BREEDERS GAZETTE, CHICAGO, ILL.

The sixtieth anniversary of the Iowa State Fair added stature and fame. In its three score years it has acquired foundation on which the present imposing superstructure is built. Commanding in its strategic position at the opening of the Western circuit, this fair exerts every possible effort to measure up to the expectations which the agricultural world each year builds a little bigger. It has no climax in sight. It merely moves an appreciable peg forward each year, the admiration and wonder of the farm world. Its stride this year was mighty. Its promoters and patrons have every reason to rest in content and gratification over the spectacle which their united efforts added to farm history in America.

A little matter of $110,000 in improvements made visible impress. The fair is in process of rebuilding. It is a long and costly process. Modern demands would have driven old-time fair managers to despair. With all its hundreds of thousands in permanent improvements the Iowa State Fair presents a Queen Ann front and a Mary Ann back. Along the street in its stock department stand spacious, modern brick structures; at their rear, sheltering valuable cattle and sheep, are sheds that scarcely meet the requirements of a county fair grounds. And about 300 head of horses and cattle were sheltered in tents. This disagreeable fact is not a reproach to the managers of this fair. They appreciate the situation quite as much as do the exhibitors and visitors; no men ever labored more earnestly to meet it. They beg to report progress—astonishing progress—and give assurance that their efforts will be redoubled until these grounds stand equipped in all departments in a fashion that satisfactorily typifies the wealth and progress of Iowa agriculture.

Access to the grounds was made more comfortable by an expenditure of $3,000 in enlargement of the street car entrance. The shed is now 240 feet long. Cement sidewalks, curbs and gutters absorbed $5,000 of the board's money. The new dairy barn, symbol of the board's intentions toward that industry, stands in line with the other new cattle barns, and is of the same architecture. It is 60 by 120 feet and shelters 108 cattle. It cost $6,000. A brick cooling out paddock for the race horses required

$9,000 of funds before its 60 by 138 feet of dimensions were added to the permanent equipment. Under the track a wide subway was led at a cost of $7,000, whereby safe access is had at all times to the infield used this year as a show place for the light horses.

Legislators were not much disposed to listen to the board's plea for equipment funds. They listened to the women of the state. The new Women's and Children's Building marks a distinct and significant departure in fair grounds equipment. Iowa says thereby to the world that the care of the infants and the education of the mothers are of as much importance to the state as the improvement of pigs and other farm stock. It is time that such a note was sounded. The sum of $80,000, $5,000 in furnishings and the balance in the building, evidences the hold this idea has taken. The new building aims at education and comfort. As a rest place for women, with its spacious rooms, baby "check-stand," children's play grounds, broad porches commanding fine sweeps of vision, and cleanly dining room, the building is worth all it cost, but its fundamental motive is educational. The lecture auditorium; the graphic appeals by moving pictures, charts, lights and warning bells toward a more rational hygiene and diet; its kindergarten in which twenty pupils from a nearby school, carried each morning to the building in a consolidated wagon, spent two hours in routine work each morning; the baby health contest, in which infants were thoroughly examined according to the more advanced standards of physical and mental tests—all these features made forceful appeal, even to the thoughtless parents, and afforded aid to the eager seekers after help that typifies in highest degree the educational feature of a state fair. The exhibit of art was also housed in this new fireproof building.

The agricultural building shows annual advances. Of especial note was the individual farm exhibits, awakening wonder by the diversity and prime character of the products of an Iowa farm. Fruits were in abundant display. The northern half of the state will harvest an extraordinary corn crop; south of the center, and especially toward the southeast, drouth has been disastrous. But no hint of it appeared in the attractive displays of farm products. The exhibit of the parcels post was in this building, an enlightening display. The state dairy department continues its helpful education, and the foundation of a dairy exhibit is in evidence that will soon call for a special building.

The machinery section afforded all the variety that could well be asked or understood, although suffering considerably from the absence of the spectacular massed displays that a half dozen or more of the largest exhibitors have been wont to make. Their withdrawal from the exhibition at the fairs this fall may have been wise, but it certainly gave smaller exhibitors a rare chance to reach fair goers. Forty more exhibitors appeared in the machinery department than last year. The smaller manufacturer thus made hay while the sun shone. The mechanical aids to farm work continued the dominant feature. They long since spread from field to farm home, and this feature was in strong display. The farm home no longer need lack all the comforts and conveniences of the city home, for inventive genius has supplied them. Gasoline engines and silos played stellar parts. Nearly a score of silos indicated the wide choice of types at the hands of farmers in building these food preserves. If any form of application of motor power to farm work, in field, barn or home, failed to be illustrated, it escaped observation. The machinery exhibit at the big fairs presents a peculiar fascination for the student. In it he reads chapters in the advancement of farm life.

Stock overflowed. Nearly 250 more cattle were present than last year and around 150 more horses. Sheep invaded the swine pens, but the porkers fell considerably short of the entries of former fairs.

Attractions were almost too numerous to be seen and enjoyed. Possibly we are reaching the climax in our efforts to amuse fair goers. If any string in the gamut was untouched at Des Moines last week, we do not know what it was. Before the grandstand, afternoon and evening, and in the Coliseum at night, entertainment was mixed with instruction. The light horses, of which a remarkably strong exhibit was assembled, played a very prominent part in these features. No stage on earth presents so many features of varied character as the modern state fair, and Iowa appears to have assumed a lead in this respect.

The minor chord is struck when the attendance is considered. The turnstiles clicked merrily on the opening days of the first week, but Sunday showed a decrease and Monday fell nearly 18,000 behind the corresponding day last year. Friday has been added to the fair week, devoted to automobile sports, and it is hoped that the total attendance will be augmented on that day. Definite information is not now at hand, but it is feared that some little disappointment may be encountered when the footings of attendance are made. The weather was for the most part agreeable. A severe storm swept over the grounds on Monday evening, following a sultry day—a real tent-leveler. No one was killed, but a number were injured. The first gust of wind put the light plant out of commission and panic reigned in a small way among the thousands in the grandstand and coliseum. No fair ever deserved better of the people. It is to be hoped that it earned reasonable rewards.

THE CATTLE SECTION.

THE SHORTHORNS.

The exhibit of Shorthorns turned out a new yard stick with which to measure the state fair stature of the breed. The entry list counted up 258 and only a few were missing from the stalls. This is not twice as many as last year, but it approximates that increase. It manifestly was an eye-opener. Neither 80-cent corn nor high-priced nurse cows entered into the calculations of the enterprising exhibitors who threw their entries into this arena. Challenging by numbers, the assault on the mental vision was reinforced by quality. Hereafter comparisons for state fair exhibits of the breed will take Des Moines in 1914 as their standard. Old-time fair goers may have seen toppers of more sensational character, aged animals of greater fame, but they would stand astonished in the presence of the long lines of prime youngsters stretched out in the arena. The futurity prizes guaranteed by the American Shorthorn Breeders' Association, to be shown at Kansas City and Chicago, are credited with the selection and fitting of this sensational lot of calves. The exhibit passes into the most creditable history of the breed, a tribute to the genius of breeders and the skill of conditioners. And it was fitting that such an exhibit should face as Judge, Leslie Smith, St. Cloud, Minn., who knows quite as well as any man what constitutes a show yard Shorthorn, as he has bred many and won with them.

THE BULL CLASSES.

The breed jumped its show with a row on between a couple of aged bulls. It was a snappy start, ten in line and some capable bulls among them. Whitehall Rosedale, son of Avondale, has made improvement so great as to occasion comment and he carried more scale than the blocky, beefy Villager Denmark, and is of really acceptable stamp, presence and smoothness. The senior yearlings presented the grand champion in Cumberland's Type. Of admitted greatness, done to the minute and of astonishing breadth, levelness and thickness, he was obliged to shake off the grip that Fair Acres Gloster had on top place. It was much of a bull show all the way through, and no place for boys in the judge's box. Cumberland's Type made a highly satisfactory champion, and the character of the opposition he overcame adds to his laurels. Royal Choice, a straight-fashioned roan of ample frame, topped the fourteen junior yearlings, with Village Victor, or more compressed pattern, nagging him to the last. Is it really proper to call a sift of fourteen senior bull calves a "short leet?" Perhaps it is when they are picked from no less than thirty-three entries. And it is credit enough to stand among these elect, even if the ribbons failed when half were decorated, as a search warrant could not have located a mean calf in the entire company. Uppermill Lord ruled them. This son of Sultan's Last bears an ambitious name, and has begun to justify it. Choice Cumberland asks little odds of any calf, so acceptably is he fashioned and finished, and he looked well next to top. Bobby Burns exemplified the evenness with which these ripened calves carry their thickness. Comment in fairness should run farther down this line of winners. The nineteen juniors scarcely preserved to the end the high level of excellence that characterized the preceding class, but the tops invited comparison with any company. Among the sensations of the exhibit none ranked higher than the roan Sultan's Coronet, one of the wonders of precocity in rotundity, smoothness and ripeness. The pair from Anoka, Augusta Sultan, the roan, and Crystal Stamp, the white, left no room between them after the Lord had been recognized. One can turn prophet and say that the white will surely stand ahead of his roan companion, or he can side with those who hold that he is now entitled to this rank. The herd that owns them both is rich.

THE FEMALE CLASSES.

The famous Mildred of Oakland, with her calf at foot, can come into the ring again in the new class for cows with calf at side. Four acceptable cows appeared among the eight. The requirement of the calf at foot certainly does not add to the show yard strength of the breed. The female champion was uncovered among the two-year-olds—the roan Lancaster Duchess 7th, a rare pattern from head to tail. Of the blocky type, she fills the latter day traditions of the breed in her modeling, fleshing and finish. The nine heifers of this age were altogether pleasing. The big-middled Village Flower 2d stood a trifle above Duchess in height, although just below her on the list. Brevity of leg and breadth of back aided Ruby Goods in standing third. Very "bloomy" were the thirteen senior yearlings, a line-up to kindle the heartiest enthusiasm. Proud Rose moved her snowy-coated, level-covered form to the top, with Silver Mysie disputing place, but scarcely so strong in back, although closer to the ground. Augusta 112th asks no odds of any in breadth from end to end. A score of junior yearlings owned as queen Fair Acres Nell, a roan with few flaws. Such a balance of scale and width and smoothness aids a judge materially in finding her amid so pleasing a lot as her competitors on this occasion. Anoka Ross may not be quite so neatly finished in the hindquarter as the blue ribbon heifer, but she is of real show yard character. An Iowa "block" wrapped in a roan hide and named Orange Flower 3d came third. Again were fourteen picked for final comparison, this time among twenty-six senior calves. There was a little "tailing out" in this class, but that did not affect the strength of the tops, where stood a couple of Cumberlands—Gipsey Cumberland 23d and Gladstone Cumberland. The blue ribbon heifer bids fair by her very bulk to overrun competition; her companion is scarcely so massive, but perhaps a bit smoother. A sweet white heifer named Lady Violet 7th claimed honors after the Cumberlands had taken their fill. A red bullet was sent to the top of the twenty-three junior "babies," and a capital lot they were up toward the head end. This was Cumberland Lass. This outline meagerly pictures the impressiveness of the display.

HEREFORDS.

A marked increase in numbers gratified adherents of the whitefaces. Superiority in quality was not marked. To increase the strength of the Hereford shows on these grounds in that particular would be well nigh impossible. The far-seeing men into whose hands the destiny of the breed is committed have long since recognized this show as a vantage ground, and have marshaled their forces in the most convincing fashion here. It is high praise indeed to say that on this occasion they well maintained past records, and it will likely be conceded that this is the case. Entries came from Iowa, Missouri, Wisconsin, Indiana and Mississippi—surely a stretch of territory testifying the breadth of interest in the breed, especially as related to its presentation before the public. A marked uniformity of type was in evidence, and an almost complete freedom from inferior sorts. Fitting was not lacking; indeed the conditioners of the breed maintained handsomely their reputation for putting on the finishing touches in artistic fashion. It was a high class, wholesome show, advanced in bloom for the most part, and worthy of the high reputation which the show cattle of this breed have attained. It was judged by Phil C. Lee, San Angelo, Texas, whose name has made frequent appearance on the prize lists of Southwestern shows for many years.

THE BULL CLASSES.

The aged bulls had a natural head in Prince Perfection, which is well accustomed to such honors. He is a really satisfying representative of the bulldom of the breed in its high estate, an impressive combination of modeling and fleshing, with abundant character. Don Perfect presented points of superiority to the judge that were not apparent to the onlookers. He certainly seemed out of place next to the top. Also objections to Imp. Farmer were entertained by the official arbiter which were not held against him by some ringside critics. His position in fifth is among the surprises of the opening engagement. He is not heavily loaded, but smooth and even and of striking quality. His stable mate, Protector Fairfax, has more scale and height. The little family differences as to purple ribbon honors between Prince Perfection and Repeater 7th, the two-year-old, was this time settled in favor of the young bull, which claims the highest consideration on his trueness to type, his balance and his smoothness. Crusader Fairfax has somewhat more of scale, being a massive chap, but not able seriously to dispute honors with the Missouri bull. Unusual scale and style are carried by the Mississippi bull, La Vernet's Prince 2d. Quality ran a little higher on the average among the senior yearling, which were a very beefy lot. A most impressive front is carried by Vernet King 4th which takes the blue ribbon to Mississippi, and he has depth and evenness to balance it. Letham Fairfax is both burly and "bully," and altogether the right sort. The grand champion at the St. Joe show, the junior yearling, Fairfax Jr., occupied fifth place here, another commentary on the fortunes of this sort of war. Disturber Jr. moved his impressive form to the head of the list, followed by Bonnie Brae 60th, with unusual depth of body and remarkable "breeches." Harris Standard 2d is somewhat on the bullet order. The seventeen senior bull calves contained no "other end." Compliment could hardly run higher. The knights of the meal tub in the whiteface camp may be expected to develop some notable animals from this age. The "babies" rarely fail to entertain with their bloom of milkfat, and the company here proved no exception.

AMONG THE FEMALES.

An even split among the ten cows left five to the good and five that were scarcely of the caliber ordinarily carried by exhibitors. Great was the spread of top and none was more table-like in this particular than Nora Fairfax. Defender's Lassie 2d may be ranked in the same category, and her ribs drop down like the hoops of a hogshead. Disturber's Lassie 4th gives illustration of that thickness of loin on which the breed has founded a part of its reputation. Among the two-year-olds a number developed great strength. Two-year-old champions seemed popular at this fair and such honors achieved by Miss Repeater 7th were not unexpected. Both the senior and the junior heifers met well close inspection, with all their generous numbers. The senior heifer calves totaled twenty and were of most attractive uniformity. Some of the juniors were molded on the egg-shape order, with fat and coat that fit such places. Interest was maintained throughout the classes, and rose to even greater heights when the big collection of groups came forward. These companies were spectacular.

THE ABERDEEN-ANGUS.

The Aberdeen-Angus have made more spectacular display at this fair. This applies both to the numbers and the character of the entry list. It would not do to say that the men who have been conspicuous in keeping the breed so strongly before the public in the Central West the past few years have failed to equip themselves with showyard material. It is merely to say that of him who hath,.much will be required, and it is no easy task to live up to the reputation acquired in bygones dazzling exhibition of the beefing qualities of this breed. It can not be claimed that sensations appeared in any of the classes, but, on the other hand, it would not be fair to class any of the exhibits as tail-enders. An average exhibit of cattle in much bloom, if not high flesh, will, perhaps, fairly characterize the 1914 show of the breed in Iowa. The aging of the season and reinforcements from the Eastern circuit should enable the doddies to make their Chicago bow in proper form. Silas Igo, Palmyra, Iowa, alloted positions, and, as usual, some exhibitors who did not get to the top continue to think their cows the blackest, or the best.

Prince Felzer had no difficulty among the aged bulls, a bull of pleasing front and level lines. Kiahogia wants somewhat the scale of the winner but is neat and straight. Scale and depth are possessed by the two-year-old Provo 2d, and the senior yearling Glennere Eclipser 2d takes rank among the most attractive in the male class. The junior yearlings were not the strongest of the section, but the senior and junior bull calves were well turned and sappy, with some good promises among them. Greatly to be regretted is the death at the St. Joe show from impaction of Kemp, the two-year-old which became the property of Messrs. Caldwell at the International sale last year at $2,005.

The cows were comely, not perhaps with the strength of other years, when black queens would command unquestioned worship, but of interesting character and so closely balanced up top as to stage one of the fights of the week. Pride Pettie finally was chosen, after the fine-scale wide-chine cow Key of Ind. 4th had run her a race for the honors. The two-year-olds were headed by Erito and among the five senior yearlings were some of much heft and smoothness. Juniors would rate as fair while the senior calves presented probably the most satisfactory alignment of the breed. Pride McHenry 129th headed a strong class of this age. Bell Eclipser of Newell 3d was most worthy company for her on the list. The wee ones were fewer and of somewhat less merit.

GALLOWAYS.

The curly-coated blacks made a small but select show. Two good herds came into competition with the Hechtner herd at the top most frequenty. A noteworthy feature was the prime fitting apparent throughout the show. Prince Favorite, winner of the aged division and grand champion bull, is a very good stamp with lots of style and character. The female championship was won by Nellie Melville, a thick, smooth sort of nice type and character. Chas. Escher, Jr., Botna, Iowa, placed the awards.

THE POLLED DURHAMS.

Chas. Escher, Jr., Botna, Iowa, awarded honors to a small but very choice show of Polled Durhams. The bull classes brought out some excellent cattle. True Sultan, winner in the two-year-old division, is a very smooth thick white bull of unusual merit, and was finally made senior and grand champion. The junior champion was found in Hazlewood Duke, a very thick smooth senior calf. The aged cows were headed by the red Lady Marshall, a cow of great scale, depth of fleshing, and quality. Thankful Martha is smoother fleshed, but not so large nor thick fleshed.

RED POLLS.

Elliott Davis, Lincoln, Nebraska, who judged the Red Polled exhibit, expressed himself as well pleased with the character of the animals shown. He found a real dual-purpose type in most of the classes and the winners showed uniformity of type throughout. The bull classes were not well filled, but the female division brought out large numbers. The winning two-year-old and grand champion bull, Teddy's Charmer, leans a little toward the beef type, and is a very smooth, well finished, attractive bull. The senior and grand champion cow was Gazelle, winner of the aged class. She is a very "typy" cow, with the milking features strongly developed. Next her in class stood the smaller Mary, neater and smoother and likewise a real dual-purpose kind. Lena is a good cow, but not quite so clean-cut as the two above her. Udder development was the deciding factor in giving the blue to Veda among the two-year-olds.

THE DAIRY CATTLE SHOW.

The dairy cattle exhibit was excellent, with the Guernseys entitled to premier place in numbers and quality. However, each breed was represented by individuals that were strong in their types and as good as are found at the shows.The judging was well done; the men who tied the ribbons were free to explain their rankings to the exhibitors, and the best of feeling was evidenced from start to finish. Comparative strength as shown by the number of each breed actually exhibited was as follows: Guernseys, 113 head; Holsteins, 85; Brown Swiss, 60; Jerseys, 59, and Ayrshires, 33.

THE GUERNSEYS.

"A Guernsey show second to none in America," was the unanimous verdict of Guernsey breeders and others who followed the showing.

Competition was keen throughout. Quality and character, combined with size and capacity, featured a majority of the entries, and Prof. Geo. P. Grout, Duluth, Minn., had no difficulty in finding the modern improved type of Guernsey in the various classes. Hayes Cherub 2d, champion at the last National Dairy Show, headed the aged bull class in vastly improved form and found his way to final honors in easy fashion. He is, in every sense, fashioned of championship material. Another outstanding good one, Cherry's Memento, was uncovered in the senior calf class. He has size and style above criticism, and was the junior champion of the show. Both he and the grand champion are from the same dam, Hayes Golden Cherry 3d, probably an unprecedented honor for one cow. The class of two-year-old bulls caused considerable comment. Raymond's Billy of the Hogue had scarce the strength of top or width of chest to entitle him clearly to the blue, while Billy of Paradise Spring City is a flash individual of beautiful quality, much of the stamp of the grand champion, and was a decided ringside favorite for leading position. The judge did not like the placing of his rudimentaries. Certain it is that the modern type failed to meet with favor in this class.

Ringside authorities conceded the aged cow class to be the strongest show of Guernsey cows ever held in America, quality and numbers considered. The winner was quickly found in Deanie 16th, a cow of remarkable balance, size, quality, and type, imported from the London herd of the late J. Pierpont Morgan. Below her competition waxed keen, and considerable time was required to return the verdict. After sending the cows out of the ring to be milked, the grand old cow, Essie Jeweller, carrying her fourteen years remarkably well and showing an immense mammary development, was placed second, with Lady Jebbe L., third. Jedetta of Pinehurst might have been elevated above fourth position but for an over-filled udder. The smaller, dainty Lady Tamworth was safe in fifth place. Lady Jebbe follows the type of the winner very closely.

The two-year-olds comprised twelve contestants which required quite a time to place. Eleven senior yearlings were likewise an excellent show. Sundari's Dairymaid won the junior yearling class largely because of her promise of udder development. Among eleven senior calves Bopeep's Queen was very pleasing in type and quality, with a strong top line and indications of a capacious udder. She was later made junior champion. Six aged herds furnished an impressive spectacle of improved Guernsey type and illustrated the popularity of the breed in the Hawkeye state.

THE JERSEYS.

The Jersey show was not large and at times it has been stronger. But two aged bulls were shown, and one two-year-old, Stockwell's Champion, which was later made senior champion. The senior calves were a good class, with Togo's Oxford Majesty, a most impressive, dark colored calf, in first place. He has wonderful character, quality, depth of rib, and trueness to type, and easily made his way to junior and grand championship honors. The aged cows numbered eleven head, among which Combination's Speculation was superior in size and strength of conformation, having great capacity of chest and barrel and extraordinary mammary development. Merline Ibsen milked out better, but had not the size and strength of the first cow. Grey Portia won the three-year-old event by virtue of her combined size and quality. Matron Queen 2d, in next position, has a grand fore udder, but lacks somewhat in barrel-girth. Hugh Van Pelt, Waterloo, Iowa, who made the awards, gave preference to utility points over mere prettiness. Eminent's Reminder 2d is a heifer of beautiful lines and type, with a most pleasing head and horn, and a good mammary development. Her right to first position among the two-year-olds was contested by Ibsen's Glory Coulisse, showing excellent temperament and nice veining. Among the senior yearlings, Majesty's Oxford Vance, because of her nice head and promise of a good udder, was given place over Stockwell's Golden Maiden, whose udder already shows remarkable capacity and good shape, although her teat-placement might be improved. In the junior class, depth and capacity of middle and large size won the blue for the Dixon entry, although Majesty's Oxford Rose gave her a close rub. The winner was made junior champion, while senior and grand championship laurels went to Grey Portia.

HOLSTEINS.

Although ranking second in numbers to the Guernseys, the Holstein classes were excellent. Three aged bulls were headed by the massive Oak Dekol Ollie Homestead that has more size and constitution than Sir Korndyke Hengerveld Dekol 36th. The blue ribbon wearer was a little sluggish at the time of showing. Sir Pietertje Ormsby Mercedes 14th had not the masculinity of head and neck of the two above him, but is a bull of great scale and good top line. The two-year-old Buffalo Forty Beets has a stronger top line and greater spring of rib than Buffalo Pieter Doede. Among the yearlings, Sir Korndyke Fytje was deeper-bodied, squarer-rumped, and had more quality of hide than Iowana Sir Ollie, but the latter was superior in head and neck. Twelve senior calves made a strong show, with Walcowis Johanna Champion outstanding in quality and type as well as in heart-girth and top line. The first-prize junior calf, Sir Korndyke Ormsby Piebe, has nice type, quality, and wonderful veining, and was later made junior champion. Senior and grand championship honors were awarded to Oak Dekol Ollie Homestead.

Seven aged cows made an impressive show, with the shapely, strong-topped and wonderfully-veined Lady Reka Mooie easily the best of the class. She has great quality. Groveland Pauline Posch, placed second, is a capital cow, but lacks in quality and top line when compared with the winner. Six three-year-olds and the same number of two-year-olds made good showings, with Burke Spring Brook Ormsby outstanding in the latter class. She has beautiful type and quality, good mammery development, and a strong top. Burke Mercedes Ormsby and Star Watson 4th followed in second and third positions. Queen Mercedes Ormsby won the senior yearling class by virtue of her capacity of middle, although her size was not as great as some of those below her. A beautiful junior yearling heifer was uncovered in Una Korndyke. She attained the junior championship. Twelve senior calves made a pleasing show. The senior and grand championships were awarded to Lady Reka Mooie. Positions were assigned in satisfactory manner by W. J. Gillett, Rosendale, Wis.

THE AYRSHIRES.

Bargenoch Gay Cavalier was the only aged bull shown, but he is worth a dozen of the ordinary kind. Weighing right at 1,900 pounds and wonderfully strong of top and deep of middle, he is a remarkable bull. The grand championship was easy for him. An exceptional show of aged cows numbered eight head and was handily won by Kilnford Bell 3d, renowned as grand champion over all breeds at the National Dairy Show. She has extra size, strong top, great capacity, and tremendous veining. Her udder is very mellow, but, as she is now nearly dry, her showing was not as impressive as it will be later in the season. Hillhouse Maud 2d is rather small, but has quality, barrel, veins, and teat-placement over Kilnford Bell 4th, given third. Carston Lady Mary Stuart is fleshy and not in milk, and Dorothy Ann is somewhat deficient in size of milking machinery. The junior champion female was the senior yearling Cavalier's Violet, a promising heifer of nice type. Hugh Van Pelt made the awards.

THE BROWN SWISS.

Improvement in the quality, character, and milking capacity of Brown Swiss during recent years was strongly evidenced at this year's show. Three herds furnished good competition. Myone Boy, winner of the aged class and grand championship, is an outstanding individual with an excellent head, great depth of rib, true lines, and plenty of size. His quality of hide and bone, capacity and style are noteworthy. The winner of the two-year-old class, Prince George of Osceola, is a splendid bull, but had not the quality nor depth of forerib characteristic of the champion. Ten aged cows furnished a remarkably strong class among which Hildare was strongest in quality and trueness to type. She was made the champion cow. Allynhurst Farm was reserve on a very promising junior calf. Hugh Van Pelt made the awards.

THE SHEEP SHOW.

C. H. Tribby, Mt. Pleasant, Iowa, served his first term as superintendent of sheep this year, ably assisted by M. G. Thornburg, Ames, Iowa. Mr. Tribby had written letters to all who had exhibited sheep at this fair for the last two years, urging them to show this season, and as a consequence the sheep exhibit far outstripped the shows of recent years. Facilities for housing and exhibiting the sheep to advantage were wholly inadequate and the shepherds are accumulating ammunition to use in a strong plea to the legislature for quarters more in keeping with the excellence of their show.

The big feature was naturally the Shropshire exhibit. Rings of fifteen to twenty head each were common in the yearling and lamb classes, and the judge, J. G. Hammer, formerly of Ontario, but now at Ames, Iowa, pronounced this the best show of Shropshires he had ever seen outside the international. Aged and yearling ram prizes went to Anoka on Buttar sheep. Mr. Hammer was at a loss to decide between the yearling ewes of Eddingfield and Anoka and asked for a referee. Eddingfield's was picked for championship. Eddingfield had purchased the McKerrow show flock of Shropshires outright, with the promise that the McKerrows would not show in these classes in the Western circuit. This resulted in a Shropshire prize list, which did not bear McKerrow's name, a curiosity at this fair. A reminder of olden days were the cup trophies awarded to the best ram and the best ewe, of any breed on the grounds, both of which were won by Shropshire entries.

The Oxford show proved a record breaker. No exhibit of the breed near its equal has been seen here before. McKerrow's high class imported offerings were pushed hard by the very worthy home bred entries of Graham and Craxon, but their more perfect fitting always landed them at the top.

The Hampshire ranks were weakened by the failure at the last moment of Wm. Cooper & Nephews to appear, but Arnold's Hampshires were ready to compete in open classes with all comers. He has all firsts and some seconds against John Graham & Sons. Arnold also had a fine show of big, sturdy Lincolns, but met with no competition.

Four flocks of Cotswolds appeared, Anoka's carefully prepared entries taking everything in the open classes. Edgar of New London, and Taylor & Sons of Ames, furnished the domestic Cotswolds.

About a dozen high class Southdowns from the flocks of Arnold and Fautz made some tight competition, especially in the yearling classes. Arnold led in all except aged rams. Postle's beautiful Cheviots and Cherry's big Dorsets met no competition, but it was a pleasure to award the money to entries of such merit.

Fine wool sheep raising is not one of Iowa's "protected industries" judged by state fair awards. The three Iowa breeders only now and then broke into the high places in competition with King of Wyoming and the Cooks from Ohio, but they furnished some very good tops in the Iowa specials. In Rambouillets King's burly smooth-coated fine wools swept the field.

THE SWINE SHOW.

Berkshire men were pleased with the size, quality and fitting of the entries in this show and with the manner in which the prizes were awarded by N. H. Gentry, Sedalia, Mo. The unavoidable conclusion from the show is, however, that the Berkshire breeders must give sharp attention to defenses of the breed in this state. Iowana Farms alone represented the Hawkeye breeders, and Iowana was compelled to share the ribbons generously with Kansas, Minnesota and Illinois. But Iowana did furnish the big feature of the show in its three-year-old sow; she was the true advertising model.

The dispute on type which has given pause to the united advance of Poland China breeders is melting into harmony. Judged by standards of a few years ago this was strictly a big type show, but at the same time the most severe critic could not offer, as a general comment, that the entries showed coarseness. The Crees aged boar, second in the class, carried 1,090 pounds of pork, but there was never a dent in his back or side, and he was smooth as a ribbon all over. It would require an enthusiastic artist, indeed, to picture a more ideal external form. The grand champion sow was Henry's under one year entry. She did not have extreme length, but was even as a model on top and bottom, and stood on a faultless set of feet with short, straight pasterns, the kind that never go down. Chas. A. Marker, Auburn, Ill., was the judge.

Among the Duroc-Jersey pigs there were some severely contested fields. The judge, A. J. Lovejoy, Roscoe, Ill., declared that in certain cases he could scarcely satisfy himself. Although the Duroc-Jersey people had offered $25 as a prize for the "biggest hog on the ground," this fetish of size was distinctly ignored in their show and the wearers of the blue were pigs of smooth form, quality and freshness. Oftentimes big size was there, but did not break into first moneys. Waltemeyer Brothers were well intrenched behind strong show material, and against some forty competitors won all the championship ribbons.

The Chester White show was put on by thirty-six exhibitors, all but two from Iowa. In all they had entered some 280 animals, a record never before closely approached by the whites. Some of the show stuff was a bit over fit, but withal there were plenty of rare good ones in the show. N. H. Gentry, Sedalia, Mo., acted as judge. One thousand and fifty pounds of Chester White boar, in the form of Barr's Wildwood Prince, was the grand champion, but the much finer type grand champion sow of Brown was the model more acceptable to the ringside.

The Hampshire breeders were there, as ambitious as ever, and with their show and their enthusiasm pushed their breed forward in the favor of Iowa farmers. Chas. E. Bunn, Peoria, Ill., of Shetland pony fame, made his entry into the Hampshire show this fall, and saw his aged boar, Bunn's Pattern, go through to the grand championship. Yates' Gloria 2d was the champion female, and an able defender of the high showing which her family has attained. All the pigs were belted, but color apparently received no consideration from the judge, Wilson Rowe, Davenport, Ia., and quality was the watchword of the show.

Iowa did not attract any outside herds of Yorkshires, but she staged a very tight show with three herds of home raised swine. The boar classes were light, but Davidson's entries furnished some trim long bacon beauties in the sow classes. F. M. Hartzel and J. B. McKay were the contestants for the Farnworth prize money, and they shared it about equally. Some common ones were driven in for the young classes, but the aged purple winners were fit to compete in much larger fields. C. C. Roup, Kalona, Ia., was the judge.

THE DRAFT HORSE SHOW.

With importers' exhibits curtailed by the European war, Iowa draft horse breeders came to the rescue in such numbers, with entries of such quality as to preserve the great reputation of the Hawkeye fair's horse exhibit. The smaller breeders felt encouraged to get into the game, and the character of their exhibits augurs well for the future of the draft horse in Iowa. Exceptionally strong shows of foals and yearlings furnished especially good evidence of continued prosperity in equine husbandry. The grand total of all horses shown numbered about 175 head more than a year ago, the increase being almost equally divided between the light and heavy horse contingents. The showing was watched by large crowds throughout. Competition was keen, and taken as a whole the draft horse exhibit was strictly high-class in all breeds.

THE PERCHERONS.

Percheron stallions furnished a strong show with good type and character among the winners in all classes. The aged class, numbering seventeen head, was topped by Kronprinz, a very rugged type with lots of bone and a grand middle. Next him stood Kapon, a horse of more quality, but lacking the size and substance of the winner. Among eighteen three-year-olds Lycee excelled in substance and even turn of top, while his head and neck are exceptional. His feet are larger than those of Luron, and his width of middle is more pronounced. The latter has heavier quarters and nicer hocks than Commander, placed third. Lavardac has plenty of size, but did not move very well on this occasion. A similar deficiency kept Lent in fifth position. Two-year-olds made the best show of the Percheron division. Among twenty-six head the grand-moving Mazagran was placed up, although he did not escape criticism in croup and set of hind legs. Malais has an unusually good combination of size, type and quality. His top is pleasing, his neck has good length, his tail is set well up, and his stifles, gaskins and forearm are heavily muscled. A bit more bone below the knee would help him, but his hoofheads and feet are excellent. Minutier is a big-boned colt, and Carlotheon, placed fourth, is a good-topped, stylish fellow. The stallion foals were a strong class, with some very promising material among the winners. The stallion championship was awarded to Lycee, winner of the three-year-old class, the yearling futurity winner, McClure's Choice, contesting this honor with him. The latter was awarded the reserve rosette.

The female class brought out some individuals of much merit, and all were well filled. Among ten yeld mares, Hermine was an outstanding good one. She has symmetry and quality combined with extra size. Her draftiness and feminine character, coupled with clean joints and bone, excellent pasterns and feet, and a nice way of going entitle her to high rank. The mare and foal class had fifteen entries, among which Gargouille and Juvenilia with their foals were first and second. Florence 2d, a very sweet, stylish mare, was placed up in the three-year-old class, although her superiors in size and bone were in the class. Lurette, placed second, was a growthier sort, with more bone and better feet. Among eighteen two-year-old fillies Carnoress, grandly topped and growthy, wore the blue, with the refined gray Mignon second. Mr. Drennan later conceded that he had omitted from the list Mr. Corsa's best two-year-old, the gray Carnette, and expressed regret that he had in some unaccountable way overlooked her in the large class. The mare foals were a good lot. The female championship went to Hermine, with Florence 2d, reserve. R. E. Drennan, Canora, Sask., selected the winners in the mare classes, but sudden illness prevented him from handling the stallion classes on Monday and his place was taken by Alex. Galbraith, DeKalb, Ill.

THE BELGIANS.

Twelve stalwart aged stallions furnished a fine show, with the International champion Farceur in the honor role. He is vastly improved over his three-year-old form, having matured into a most impressive horse, very clean of limb, correct in set of underpinning, and excellent in way of going. He leaves little to be desired and made a clean win of championship honors. Prof. W. J. Kennedy, Sioux City, Ia., who made the awards, pronounced the fourteen three-year-olds the hardest class he has ever been called upon to judge. Competition was keen all along the line. Paul de Roosbeke has not the size nor extreme draftiness of Combattant de Granty, but his better head and neck, longer croup, and flatter bone gave him a slight advantage. Pacha has considerably more weight than Volcan 2d, but the latter is a very clean-cut type with much nicer hocks than the drafty Bienfait, placed fifth. Among twelve substantial two-year-olds, Ruban was first mainly because of his substance and balance in conformation. An extra foal was found in W. C. Estes' Ob. With such promising American-bred youngsters, material will be available to mitigate some of the losses that the war will entail on our farmers who have chosen this breed for draft stock improvement.

It was a show of unusual merit throughout the female division. It was almost exclusively an Iowa show also. Prof. Kennedy found an even clean well-balanced lot in all classes, and his work satisfied exhibitors and ringside. Anna du Balcan was an outstanding mare in the yeld class from which six head were barred because of failure to appear promptly when the class was called. Due notice had been given all exhibitors of this penalty. Anna has the desired Belgian type, including lots of clean bone, nice pasterns, and very heavy middle and muscling. Thirteen entries in the mare and foal class made a great show. Flora and foal were placed up because of the mare's good feet and bone and her filly foal's exceptional size and type. The first-prize three-year-old mare Paula de Lens is a grand one in every way, while Dora among the two-year-olds is a sweet mare with exceptional hocks and plenty of size. The championship was awarded to Anna du Balcan, with Paula de Lens reserve.

THE SHIRES.

Cowley Triumph, a grand rugged sort, with bone to spare, headed the class of aged stallions. Among the eight three-year-olds Boro Blusterer was outstanding in size, type and quality. The first-prize two-year-old Royal Patch is of extra excellence, and an outstanding foal was found in Royal Fame. Boro Blusterer won the purple rosette with Royal Patch reserve.

Eight yeld mares furnished a good class with the famous Coldham Surprise in first position. She is a very large, well-balanced, drafty mare, exceptionally clean in bone and joints, and good in pasterns and feet. R. B. Ogilvie, Chicago, who assigned the positions, pronounced her in better form than ever before. She made a brilliant show and was the outstanding individual of the Shire female division. The reserve championship went to the second-prize aged mare Wallington Sunbeam.

THE CLYDESDALES.

The stallion classes were of good quality. Size and stallion character had much to do with King Norman's win in the aged class, which was one of the best forward in years, and final attainment of championship honors. Prince Cedric, standing alongside was a very clean-legged sort and a nice mover. Forest King might have gone higher than third position had he kept his hocks a little closer together at the walk. The eight two-year-olds were a uniformly good class throughout, with Victor Favorite in somewhat higher finish than those below him. The reserve championship was awarded to King's Emblem, second-prize colt in the futurity, and son of the champion, King Norman. The judge favored this colt for first place in the futurity, but was overruled when a referee was called in to decide the placing of the first two colts. Still believing him to be the better colt, he reversed the futurity placing when awarding the reserve championship.

The Clydesdale females were strong in numbers and good in quality. Among the younger mares some excellent individuals came forward. Lady Stewart, winner of the two-year-old class, is a filly with grand underpinning and an exceptionally good middle. She made a great show. Lady Favorite, third in the same class, while representing somewhat the older type of Clydesdales with somewhat more ruggedness than is commended today, is nevertheless a good one of a strictly useful sort. The awards were made by Donald Campbell, Hannaford, N. D.

NATIONAL DRAFT HORSE FUTURITY.

The richest stakes ever competed for by yearling drafters, and the strongest classes of yearlings ever shown at a state fair, briefly describes the character of the futurity event promoted by the "Live Stock World," Chicago, and explains the presence of the big crowd filling the Coliseum to witness the judging. Percheron stallions numbered sixteen head and the fillies two more; the Belgians numbered eight of each sex; there were thirteen Clydesdale colts and eleven fillies, and Shires were represented by eleven and thirteen head respectively. A total of $3,871 was distributed in the eight classes, of which $1,469 went to the Percheron classes. To the regular judges were added Peter Hopley on the Percherons, J. G. Truman on the Belgians, Leslie Smith on Clydesdales, and Latimer Wilson on the Shires. Great credit is due J. H. S. Johnstone and the "Live Stock World" for having so successfully applied the futurity idea to the breeds of draft horses.

THE PERCHERONS.

The gray McClure's Choice, a very wide, deep middle, rugged colt, with much size, extreme bone and draftiness throughout, was first. He is a son of Honorable. The big black Dudie was a close second, but lacked the strength of back of the blue-ribbon winner. Helion, son of Helix, a well-balanced colt, and the best mover in the class, stood third. Magnet, in fourth place, is an exceptional colt with lots of draftiness and bone.

Next him stood Carbon 2d, by Carnot, a very pretty sort with quality to spare. Keota Idea and Navarre, sons of Honorable and Gavail respectively, were both good types and filled their positions acceptedly.

Carnante and Folito 2d, two excellent daughters of Carnot, wore the blue and red in the filly division. The former is a heavier-boned filly, heavier muscled and better in fore pasterns, but many of the ringside preferred the second-prize filly because of her sweetness of head and neck, flatter bone, and neater joints. Neva, by Fier-a-Bras, has excellent quality and is a high-class kind in every way. The same is true in slightly less degree of Helen Helix, placed fourth. Jalap's daughter, Maple Grove Snowball, a gray with plenty of bone and excellent type, but a bit plain about the head, stood fifth. Hazel Helix was sixth, with another Carnot filly in seventh position.

THE BELGIANS.

The yearling classes were not quite up to the remainder of the Belgian show. Irvinedale Jean, by Danube, is a nice roan, the cleanest-cut type in the class, with a good top line and a pleasing walk. Prince Imperial, son of Robuste de Thalie, is a very rugged sort. A very large colt, Prize Winner, stood third, with the bay, Orderly, alongside. The latter had the best feet and the most correct way of going of anything in the class, but his top is a bit plain. Frenchy is a younger, smaller colt, and Bourdon 2d is slightly deficient in amount of bone.

Jolie de Thimeon 2d, daughter of Bourdon, a filly with plenty of size, good feet and ample bone, stood first. Lili, by Comet, is a very wide one of the extra-drafty sort. Irvinedale Minnie in third position was the best in action and has lots of quality. Lack of size kept Irvinedale Viola in fourth place, and Anna 2d would have gone higher than fifth except for a temporary blemish.

THE SHIRES.

The Shire futurities were surprisingly good shows. Fleetwood Laddie, sired by Saltfleet Dray King, is best at the ground, has faultness bones, is grandly topped and moves more truly and easily than the others. Royal Moors, son of Royal Grey, stood second. He is in thin flesh, but is strictly a good one. Royal Pilot is a rugged, grandly-topped colt, and Paramount Milton was placed above Sylvia King because of his greater size and better quality.

The fillies were headed by Royal Jolly, sired by Royal Grey. She is very stylish, with a strictly feminine head and neck, bone and feather of quality, and stands and moves right. Princess Beauty 2d has more bone than the winner and is modeled after a wider pattern, but was well placed in second position. Blandina has excellent quality and correctly-set limbs. Favorite Duchess and Marie Brilliant followed in close order.

THE CLYDESDALES.

What was declared to be the best ring of yearling Clydesdale stallions ever seen in the United States furnished such close running that Professor Kennedy was called in to referee between the first two colts, upon which the two regular judges disagreed. Hope's Prince, by Baron's Hope, is a heavier-boned colt than King's Emblem, son of King Norman. He is two months younger than the latter and was better liked at the trot. The McLay entry had feet of nicer texture and took a longer stride at the walk. Some critics believed that Favorite Prince was scarcely entitled to third place over Prince Fearless. The latter is in thin flesh, but has very flinty bone and excellent slope of pasterns, has his hind legs put under him right and moves well. King's Voucher and Queen's Prince are both good individuals.

The fillies were hardly so strong a show as the colts. Palmerston's Favorite by Stewart's Favorite, is a good kind, barring rather small hind feet. Lady May, by The Pinnacle, is heavier-middled than Evangeline by the same sire, but the latter excels in set of hind legs and pasterns as well as size and texture of feet. Osco Darling has excellent quality.

THE SUFFOLK PUNCH.

Hawthorn Farm, at Hawthorn Farm Postoffice, Lake county, Ill., was the only exhibitor of Suffolk Punch horses and made a very creditable display. Westside Chieftain, the aged horse made champion, is a horse of true draft size and substance and has a good way of going. He would look well alongside the good ones of the better-known draft breeds. Nearly a score of horses of this clean-legged chestnut-colored breed were on exhibition, among them a number which have been bred at Hawthorn Farm.

SADDLE HORSES.

Awards in the $1,000 stake for gaited saddle horses were thus made: 1, Houchin & Anderson, on Astral King; 2 and 4, Miss Loula Long, on Kentucky's Best, and Maurine Fisher; 3, Paul Brown, on Johnny Jones; 5 and 6, E. D. Moore, on Miss Cliff, and Majestic McDonald; 7, Hamilton Brothers, on Art Bonta; 8, Mr. and Mrs. O. J. Mooers, on Lawrence Barrett.

The special prize, a $100 trophy, offered by the American Saddle Horse Breeders' Association for stallion or mare three years old or under to be shown at hand, was won by Bruce Robinson, on Kentucky's Champ Clark.

THE PONY SHOW.

The usual strong show of Shetland and Welsh ponies held the interest of the rising generation of horsemen and horsewomen Friday morning and afternoon. The Shetland classes were well filled throughout, and some exceptionally good individuals found their way to top honors. Twenty-one stallions came forward in the aged class, and the foal class numbered twenty-eight. King Larigo continued his numerous winnings. Among the Welsh ponies there was considerable variation in size and type, several entries leaning strongly toward Hackney type. Pony breeders should make their breed types include a definite conformation and way of going, instead of basing their classification upon measurement so exclusively. However, W. A. Dobson, Des Moines, Iowa, placed his ribbons to suit the ringside, and the winners had correct Welsh type. The merit of the show appears in the fact that the first prize aged mare at the 1913 international stood second in class to Dinarth Roany, a beautiful mare with excellent quality and action.

IOWA HOMESTEAD, DES MOINES, IOWA.

The Iowa State Fair is an institution of which any state might justly be proud. Leading in the production of corn, oats, hay and hogs, it is only right and proper that Iowa should also lead in the annual exposition which calls the attention of the world to the agricultural resources of the fertile heart of America. It is given to Iowa to open the grain-belt series of state fairs. No other state holds an exposition which can equal the Iowa one in the quality and quantity of live stock and farm products displayed.

The 1914 Iowa State Fair, held at Des Moines, will go down in history as the biggest and best—from an exhibit standpoint—in the long and honorable list. For sixty years Iowa has been inviting the world to its doors, bidding it to come, enjoy itself and be instructed. The world did not respond in as large number this year as last, but the fair was worthy of a bigger attendance than has ever yet been accorded to it.

Considering the fact that there were one-fifth more horses and cattle shown this year than ever before, it becomes apparent that the 1914 Iowa State Fair breaks all records and is entitled to the grand championship sweepstakes. Never before was there such an exhibit of live stock as was to be seen in Des Moines this week, testifying to the high plane which the live stock industry has reached in this state. With the foreign supply cut down almost to the vanishing point, by the seizure of pure-bred mares and stallions for army service, the door of opportunity for the Iowa and the grain-belt breeder is opened as never before. Even a casual glimpse in any of the stables in Des Moines this week would convince the most doubtful that here is one state, at least, which has the stock and the breeders for the crisis. Many of the horsemen declared it will be twenty years before Belgium can export any pure-bred horses. France will be cut down in its exports for at least half that time. In the meantime, it will be to America that the horse industry of the world must look. With its wonderful lead over the rest of the grain belt—the 1910 census showing Iowa to have horses to the value of $188,160,000, or over $10,000,000 in excess of the next leading grain-belt state—it was meet indeed that the horse display at the 1914 Iowa State Fair should have been unsurpassed.

With the best display of Short-horns ever gathered together, and with every department and class full of splendid entries, the Iowa State Fair for this year was a record-breaker.

Iowa is accustomed to having ideal weather for its annual fair. It was somewhat of a shock, therefore, to find that the customary ideal brand was not on exhibition this year. The fair started with ideal climatic conditions, it being so cool that the stock was shipped with far less trouble and fewer casualties than usual. But the threatening skies deluged the fair on Monday night, wetting many thousands of sightseers and doing several thousand dollars' worth of damage to the grounds, mainly to the tents and minor exhibition structures. Lowering clouds were present throughout much of the week, resulting in a decrease, rather than the anticipated increase, in attendance. President Cameron had predicted that the attendance this year would pass the 300,000 mark, but the weather man was obdurate, and so the attendance dwindled somewhat. Monday was expected to be the big day, but the total attendance was only 40,000, falling about 18,000 short of the same day last year. It was regretable that better weather could not have prevailed, as a better show was never held.

The new Women and Children's building was a center of attraction for thousands. Iowa is the first state in the Union to provide such a building, which is given a commanding position and takes rank as one of the finest structures on the grounds. Thanks to the untiring efforts of a little band of determined women, the last legislature appropriated $80,000 for a building in which the work and welfare of women and children should be exhibited and advanced. The money has been well and judiciously expended. The building is sightly from an architectural standpoint, its wide verandas offering rest and comfort and its numerous departments providing entertainment and instruction for men, women and children. Chief interest centered in the babies' health contest, which, instead of being held in a small tent, as heretofore, now has several large and admirably arranged rooms, with a large auditorium for the comfort of the spectators. Here some three hundred tots were examined as to physical qualifications in the effort to find the most perfect youngster in the state and to stimulate parents generally to pay more attention to the rearing of their offspring. But the baby show was by no means the only attraction of the building. A large and comfortable auditorium, in which were given daily lectures on hygiene, sanitation, the care and training of children and home economics, drew large and interested crowds. The art exhibit was especially commendable, being so much superior to the so-called exhibits of former years as to be beyond all comparison. A model school was shown and striking exhibits made in the campaign to rid the state of tuberculosis and to advance the health interests of young and old. Rest rooms, children's playgrounds, nurseries and kindergartens are provided, adding to the comfort of those who come long distances to attend the fair. It is now possible for a mother to leave her baby, for a fee ranging from 5 to 15 cents a half hour, in the charge of a competent nurse and see the fair in the knowledge that her little one is being well cared for and vastly better off than if it were being dragged about from one spot and exhibit to another. If the 1914 Iowa State Fair did nothing but demonstrate the place and value of the new Women and Children's building it would be well worth all it cost, both to the state and to every individual in attendance.

Iowa is the best market in the United States for automobiles. If any one doubted this for a moment the number in evidence at the fair grounds this week would have converted him. Already the license tags have passed the 100,000 mark and still the Iowa farmer and the Iowa townman are buying steadily. Thousands of farm families drove in to Des Moines this week in their own motor cars. Last year the management permitted these cars to be parked along the main street of the fair, thus making it crowded and dangerous to human life. This year special quarters, or paddocks, were provided for the automobiles, making it more convenient to the drivers and minimizing the danger to life and property on the main thoroughfare of the grounds. There is no better barometer of Iowa prosperity than the automobile paddock at the state fair. It is safe to say that two-thirds, possibly three-fourths, of the motor cars being sold in Iowa are being sold to farmers or small-town people. It is here that prosperity is most general and the automobile most needed and most useful. While the various makes of motor cars are not exhibited at the fair in as large number as heretofore, owing to the high cost of exhibit space, the number of automobiles on the grounds is increasing at a rapid rate. It is a sight of which to be proud to see a well dressed farm family driving to the fair in their own automobile, deftly driven by the head of the family or one of the younger folks. It testifies to a state of prosperity which has never been equaled in any other state or at any other time in our history.

A resolution requesting new and adequate sheep quarters was signed by practically all the sheep exhibitors and will be presented to the legislature next winter. There is no question but that interest in this important branch of the live stock industry is growing in Iowa by leaps and bounds and the sheep men are entitled to what they ask. This year the exhibits were so large that it was necessary to crowd some of the sheep into the swine pens. The old quarters are not only crowded, but are inadequate in every particular, the roof over the pens and judging pavilion being leaky and causing discomfort to exhibitors and exhibits alike. Iowa now has well on toward a million and a half head of sheep, of the value of $7,500,000, at a conservative estimate. Such an important industry should have better provision made for it at the state fair. The sheep men have rejoiced at the success of the horse, cattle and hog men in securing ample quarters, now they believe it is high time more attention was being paid to them. The superintendent of this department is a new man, Mr. C. H. Tribby, of Mt. Pleasant, but he has taken hold of matters with determination and proposes to keep up the campaign until the sheep men of Iowa are given the recognition and quarters all too long denied them.

It is doubtful if the Iowa state fair grounds ever looked cleaner or better than they did this week. Many of the unsightly frame buildings, which formerly encumbered the grounds, have either been removed or demolished. Several old frame buildings formerly given over to machinery exhibits have been removed to less conspicuous sites and their place given over to parking or flower beds or to make room for the larger crowds now attending the annual exhibition. Never before were the flower beds more numerous, better kept or more sightly. There was a time—and that not so very many years ago—when the physical comfort of the fair visitors was practically overlooked. Live stock and farm machinery were exhibited in large numbers and the world was bidden to come and look, whether it could look in comfort or not. Now there are many places in which to rest, and practically every exhibit can be inspected in comfort. The grounds were an eye treat this year as never before. Likewise, there were benches a-plenty for the weary. Second, only to this attention to physical comforts was the commendable lack of the one time prevalent spirit of gouge and graft. Neither on the grounds nor down town was there any evidence of over-charge, an evil which once flourished unchecked. Prices may seem high, at times, to those who are away from home, but it is to the credit of Des Moines and the state fair that prices were not raised for the occasion, being merely the regular ones now generally prevailing. In this respect the Iowa fair sets an example which it is to be hoped will be followed throughout the entire fair circuit.

The state fair management is entitled to much credit for giving the people a great show free from all objectionable features, entertaining and instructive throughout. The grounds have been ridden of many of the "ballyhoos" and fakers formerly present and conspicuous in all too large number. The Midway attractions were the best and cleanest ever provided. The best of order was maintained. There was but little of the discourtesy which was once allowed to prevail unrebuked. The management realizes that the people come to a fair to learn and be amused. The exhibits provide the instruction. The vaudeville attractions provide most of the amusement. This year they were commendable in the extreme. Chief among the entertainers was the daring aviator, Lincoln Beachey, whose death-defying flights three times a day not only thrilled the immense crowds, but showed the wonderful possibilities of the airship. Aeroplanes are no new sights, but the Iowa State Fair has never had an aviator who lived up to his contract so well or performed such thrilling feats aloft as Beachey.

Sixty acres of farm machinery! It is a wonderful sight. It was to be seen at the Iowa State Fair this year. Iowa is the biggest and best market in the world for agricultural machinery. The exhibit was in keeping with this immense demand. The mechanical aids to farming are innumerable, many of them almost human in their ingenuity. The splendid Machinery Hall was supplemented by a large, miscellaneous display which never failed to attract thousands and to show the farmers how wonderfully the mechanical genius of man is rallying to his help.

Among the novel and instructive exhibits, with which the fair was replete this year as never before, was the parcel post package display gathered together by the Des Moines postmaster, Mr. L. C. Kurtz. An invitation was extended to various local business houses to submit packages of goods such as they were accustomed to sending through the mail, in the parcel post, and the response was hearty. As a result, several score of packages, prepared for shipment and showing the possibilities of the parcel post, were exhibited, attracting much attention. If the average farmer needed any proof that the parcel post presents far-reaching opportunity, both for the sale of small produce and the purchase of small supplies, the striking exhibit made at Des Moines this week should convince him.

BREEDING CATTLE.

The observant fair visitor this year quickly noticed that a marked change has occurred in the show of cattle in the live stock pavilion. Where in previous years there has been but comparatively few dairy cattle and the ring was filled with beef cattle, there has grown to be a dairy show almost equal in character and importance to the beef cattle. A state fair is a mirror for the industries of the state, and the Iowa fair of 1914 indicates that a high degree of development has obtained in the dairy industry of this commonwealth. It does not show, however, that the beef industry is suffering to any extent as yet. In fact, one of the big features of the beef cattle show was the wonderful development of the exhibit of one of the breeds. No Iowa Short-horn show has ever surpassed the one made this year, either in numbers or high quality of the animals brought out. In the barns, which were crowded to their capacity, the interest of the farmers of the state is even greater than before, and there are more men asking about better stock. In the dairy side of this show, nothing attracted as much attention as the exceptional classes of Guernsey cattle that were placed there. Judging in the cattle began on Saturday, which is a new departure for this fair, and from the results this year has proved a good one. Iowa set a good record in the cattle department for her neighboring states to follow this year. The judging was highly satisfactory in all the breeds and the classes, which were scheduled in advance, were placed rapidly, efficiently and without any confusion whatever.

SHORT-HORNS.

No Iowa show has ever surpassed the record made by the Short-horns this year in the high class of the exhibits or in the numbers shown. Comment to this effect that this showing will take rank as one of the best that has ever been brought out anywhere in this country was made by those who have followed the state fairs and the stock shows of this country for years. Beginning with a class of aged bulls, which was said by competent authorities to be the best, from first to last place, that has been led into a ring for a long time, the rings were, with the exception of the two-year-old bulls, even and close. The side of the arena devoted to the beef breeds had barely enough room for the display of Short-horns alone. One of the prettiest sights of the entire fair was the big ring of aged herds, the whole beef cattle side of the pavilion being practically filled with the entries. Rees & Son won first in the aged bull class, with Whitehall Rosedale, a big roan that is of a most rugged type and carries an exceptionally thick covering. He was defeated for the championship by Cumberland's Type, a bull with wonderful style and quality. The Saunders' herd made a very strong showing throughout the competition. Thirty-three senior calves came out for the money, a bunch showing exceptional merit. When they left the ring the thick Uppermill Lord was at their head. The calves in the first four places were close and all had some favorites in the ringside. All the classes of young stuff were good—indeed, superb. The Kilgour herd from Illinois made a good showing in the female class, taking first in senior and junior yearling heifers, and placing in the senior heifer calf class. Iowa herds were among the leaders in this show, the Burge, Westrope, Herkelmann, Graham, Thomas, Watts, and Lakewood Farm entries winning many coveted places, aside from those already mentioned. Anoka Farms, of Waukesha, Wis., took the female championship with Lancaster Duchess 7th with the Kilgour entry, Proud Rose, as junior champion. Both these cows would have looked well as champions in the usual shows, but the Harding entry showed a little the stronger. Leslie Smith, of St. Cloud, Minn., made a good job of the placing, the decisions being accepted without discussion.

HEREFORDS.

Iowa attracted Herefords from widely-scattered territories. The Davis herd from Mississippi, Taylor from Kentucky, O. Harris & Sons, J. M. Curtice, and Buhl & Sidwell from Missouri, Robinson from Wisconsin and McCray from Indiana all having entries. This did not prevent Iowa from winning many of the choice places. The quality in all classes was of the highest order, while the total number shown was sufficient to make a top-notch exhibit. The judging by Phil C. Lee, of Texas, was satisfactory all along the line, and promises to stand wherever these animals may meet during the fair season. Repeater 7th, the Harris two-year-old bull, was made champion, and his blocky type, even and thick covering and finish promise favorably for a high place wherever he may be shown this fall.

THE ABERDEEN ANGUS.

Angus cattle continue to make a rather conservative showing. Several of the herds that formerly seemed fixtures at the Iowa State Fair turned up missing, with their places not filled by newer breeders. Though lacking in numbers, there was still a uniform showing made, no class showing tail end stuff. Escher won championship with his bull, Prince Filzer, a big, smooth, growthy fellow, the sort that appeals to a business breeder. The Caldwells were given female championship on Eritus C, after a close contest with their senior champion, as noted below. The Eritus cow is a little superior in hind quarters and a little more even in covering. As usual with the Angus, Iowa led in the number of breeders showing. Silas Igo, of Indianola, Iowa, made satisfactory awards in all classes.

POLLED DURHAMS.

The showing of Polled Durhams fitted in admirably with the general high character of the bovine exhibit at the Iowa State Fair. There were types in these classes that were not excelled, in so far as quality, finish and scale were concerned, in any of the beef breeds. Ed. Stegelin, of Kansas; Achenbach Bros., of Kansas; Shaver, Seeley and Huntley, of Iowa, and Hultine, of Nebraska, won the prizes as given below. Chas. Escher, of Ryan, Iowa, was judge.

GUERNSEYS.

The keenest kind of competition developed in the Guernsey classes. No breed illustrated the advancement that has been made in the dairy-cattle showing as well as this one, and there were probably more high-class individuals of the breed shown than in any other exhibit. Beginning with a sensational class of aged cows, in which there was not a cow which could be called a poor one, the entire exhibit maintained an unusually high standard in every class. The classes were all close, there was hardly a walkaway for any single winner, but what was most pleasing of such a show was that Professor Grout's awards were all received well. That there is no division of the breeders as to types within the breed was evidenced in the group showings, especially when the aged herds were being awarded ribbons. It was indeed a beautiful and instructive exhibit. W. W. Marsh, of Waterloo, Iowa, added greatly to the interest of the exhibit by showing a few of the individuals imported from the English herd of the late J. P. Morgan. Deanie 16th, first prize aged cow, senior and grand champion cow of the show, is a specimen of Guernsey dairy type which helps improve score cards. She has a most mellow quality, possesses refinement which does not weaken, has a very well shaped and capacious udder, shows digestive and mammary qualities which mark only the better dairy types. Marsh's aged bull was also made champion and here again in the masculine was demonstrated a high rank of type. He is strong and shows character, but not the grossness so often seen, has good lines, an excellent girth, and a great character-giving front. The Jones cow, Daisy's Sequel Boy of Dunnach, which stood second to Deanie 16th, is a cow which, although perhaps not so showy a type, is a producer in looks, if barrel capacity and size, shape and quality of udder, together with constitution and quality, can prove it. Chas. Hill, of Wisconsin, A. W. & F. E. Fox, of Wisconsin, and Wilcox & Stubbs, of Iowa, had excellent entries and won a goodly share of the prizes.

HOLSTEINS.

Holsteins are coming to be quite numerous among the dairy breeders of the corn belt, and, as would be natural to expect, there were a good many exhibitors of the breed. The selections of Mr. W. J. Gillett, of Rosendale, Wis., were seldom questioned, never seriously criticised, and were made with good reasons in every instance, which he was very ready to give to those who asked for the information. This manner of instructive judging is to be commended as an educational feature which an institution like the Iowa fair can afford to develop. The bull-calf class was judged by H. G. Van Pelt.

BROWN SWISS.

To a great many who have not been acquainted with the breed, the individuals shown in the Brown Swiss competition furnished pleasant surprises as to what breeders have done in developing dairy type. It is only a few years since Brown Swiss breeders refused to follow that will-o'-the-wisp, the dual-purpose type, and turned their attention to developing a strictly dairy breed, and the progress that has been made must be very gratifying. Much of the roughness is disappearing, while losing none of the characteristic rugged appearance and a real dairy machine is fast being developed. The cow, Hildare, shown by Hawthorn Farm, Lake county, Ill., is an example of a rugged dairy machine that many dairy men are seeking. She has as capacious and well-shaped an udder and is as well veined as the better cows of other breeds, with the digestive capacity and strength of constitution that are the envy of all dairy breeders. There were others nearly as good, but she is mentioned as an illustration of what this breed can accomplish. H. G. Van Pelt judged the breed.

AYRSHIRES.

Ayrshires make a very attractive exhibit when the good ones are brought out, as they were this year. There should be more of them shown, for they undoubtedly have a place in the dairy regions of this section. Only two herds were shown, those of Adam Seitz and the Ferndell Farms, both of Wisconsin, but these two herds are both representative of the best of the breed in show type and productive conformation. There was nothing sensational shown, as in some of the other dairy breeders, but neither was there anything that could be called of an inferior sort. These cattle were placed by H. G. Van Pelt, of Waterloo, Iowa.

DRAFT HORSES.

The total number of horses shown this year at Des Moines was greater than a year ago, but in the draft section it is doubtful if the show equaled that record. It would be classed as about an average show for the fair, but it must be remembered that the standard which has prevailed in previous years has been a high one. Of the four principal draft breeds, the Percheron, as in other years, made the largest showing. On the whole, however, there was missing from the classes of this breed some of the exceptional entries which have been seen here during the history of the fair.

The main item of discussion among the horsemen was the probable effect of the disturbances in Europe on the horse business in America. Breeders who are fortunate enough to have a good supply of bred mares on hand were being congratulated, and had good reasons to feel optimistic over the outlook for the future of the business here.

One of the most attractive parts of the showing was the classes of mares with foals at side. Some great brood mares were brought out. There were better foals than have been shown here before. It was in these classes, too, that the judges of every breed found their greatest difficulties in making the awards on account of the closeness of the animals shown. American bred rings were a little stronger than have been seen in other years, while the number of smaller breeders who entered mares and stallions this year showed a material increase.

PERCHERONS.

American bred Percheron mares are coming to form a larger part of the exhibit of this breed each year. This brings with it the swelling of the lists in the foal classes, a fact which was well demonstrated during the

Percheron showing. There is also coming to be a closer correspondence between the open classes and the "bred by exhibitor" shows. The younger stallion classes were close, also the mare classes throughout the entire showing. The first place winner in the aged stallion class was a good draft type and one of the sort that looked good to breeders. There was a little criticism of the placing in the class of mares with foal at side, and the one three-year-old stallion class, but most of the classes were so close and so good that much balancing of fine points was necessary to get the winners. R. E. Drennan, of Canada, started the judging Saturday, but was taken ill and on Monday and Tuesday Alex Galbraith, of DeKalb, Ill., acted. In the futurity classes, which again attracted much attention, Mr. Galbraith was assisted by Peter Hopley, of Lewis, Iowa.

BELGIANS.

Some really high-class horses were out for places in the Belgian show. An International winner took the lead among the stallions and good entries prevailed in all the male showing. When the grand display of five stallions was called, the Champlin quintette of chestnuts that won this ribbon showed a uniformity of type and a quality of the best sort which would have been hard to defeat anywhere. The champions were all Iowa owned. W. J. Kennedy, of Sioux City, Iowa, was judge and was assisted in the futurity classes by John Truman, of Bushnell, Ill.

SWINE.

DUROC JERSEYS.

The show of "Reds" was a popular one with the onlookers, and much spirit was manifested. The Durocs had the greatest number of exhibitors entered and the most pens ordered, but they had to yield in numbers on the ground to the Chester Whites. Mr. A. J. Lovejoy, of Roscoe, Ill., the judge, was confronted by many a stiff proposition, but succeeded in giving satisfaction. The line-up of twelve aged boars showed at once that the $25, which a Duroc Record Association had offered for the heaviest pig on the grounds, would not go to a red one. However, they were the kind that grow fast and dress well. Waltemeyer took the blue here and again on his senior yearling, a big, sturdy fellow, upright, with big bone and as smooth as a ribbon. Waltemeyer again drove out a beautiful top to the aged sow ring, a short-legged individual with most enticing lines. Waltemeyer lost the ribbon on his senior yearling sow because of a bad tumor in her udder, but he came back in the under-one-year class. The ring of nineteen good ones was the hottest contest of the show and caused the judge to ponder long. He finally turned down some choice, low-down, thick ones of Vanderhyde's for a trio with more youth and stretch, headed by Waltemeyer's. Waltemeyer camp has, in fact, cause to rejoice. Against a field of some forty exhibitors they captured all six championship ribbons.

POLAND CHINAS.

The Poland China show needs no apology. It was a worthy one, but recollections of only a few years back, when the entries were more numerous by threefold, could not be repressed. The dispute on type which has divided the Poland China breeders and has given pause to their united advance has allowed the breeders of the reds to make deep inroads into their territory and into the public favor which was theirs. But the dispute is now in its twilight stage, and the big hog with quality is coming to its own. The aged boar class brought out several hogs past the 1,000-pound mark. The entry of Crees carried 1,090 pounds, but bore never a dent nor a wrinkle, and his stocky, short legs and straight pasterns held him up in flashy style. But Sievers' hog had a bit more of length and also mellowness, and the judge liked him better. Paul's aged sow had just weaned a litter of nine pigs and lost to Lonergan's junior yearling for senior champion. A still younger one, Henry's under-one-year entry, was the grand champion sow, however. She was indeed a pleasing sight, not of extreme length, but smooth as a ribbon on top and belly and with feet and bone that are true models of perfection. It was a show of big pigs, rather than a big show, but no fair-minded critic could say that it was a show of coarse ones. J. E. Meharry, veteran showman from Tolono, Ill., was missed from the ranks. He is said to be plotting for Pan-American 1915. C. A. Marker, the man to whom, as his feeder, Meharry owes much of his success, was judge, and his decisions were happy ones.

CHESTER WHITES.

The "Whites" also made a score of the "heaviest show yet" as regards number. Thirty-seven exhibitors, all but three from Iowa, and they were all there except Mr. Thos. Kent, of Walnut, Iowa, and, for the most part, with good-sized herds. That veteran breeder and Judge, N. H. Gentry, of Sedalia, Mo., selected the winners and he launched many a surprise. Plenty of good stuff failed to capture blues in accordance with ringside judgment. The sow stuff upheld the excellence of the show.

HAMPSHIRES.

Hampshire breeders have got the "bigger and better than ever" habit and their show was in full accord with this policy. Fifteen exhibitors entered some 160 pigs and they made an array royal in the Hampshire pens. Some belts were wide and some were narrow, but it mattered little to the judge, Mr. Wilson Paine, of Davenport, Iowa, and quality was the watchword of the show. The line-up of good boars was saved from mediocrity by the top pair, and the better of these, Mr. Bunn's "Bunn's Pattern," was indeed a hog to remember. The royal purple sow was Yates' Gloria 2d, a rare combination of bacon side and lard back. Sentiment has a place in the Hampshire breeders regime and many beautiful and costly cup trophies were awarded, amid repeated hurrahs and cheers. The breeders didn't break up their rally until six o'clock and left the ringside hatching plans for, in Mr. Stone's words, the best and biggest show ever staged by any breed of swine at any time or at any place in the world.

BERKSHIRES.

Five exhibitors came under the wire in the Berkshire classes which was well nigh equal to that of last year. But the Berkshire Association must look to its defenses in Iowa, for but a single herd, that of Iowana Farms, appeared to represent the breed at this state fair. N. H. Gentry made the awards and the prize money, for the most part, was distributed with some degree of evenness to all the exhibitors. Four championships went to four different breeders. The winning aged boar carried a wonderful top and was easily entitled to the blue and the royal purple. Iowana won out in the aged sow class with their grand champion of last year. She has been shown for three years, and has never been defeated. She is today a joy to look upon. No sow ever carried a smoother loin. Berkshire men generally were pleased with the size, quality and fitting of entries and with the awards which were made.

YORKSHIRE.

Some choice bacon types were seen in the Yorkshire classes. The boar classes were not well filled, but there were some good individuals shown. The sow classes were strong and although Davidson captured the championship ribbons he was pushed hard in many cases. The judging was done by C. C. Roup, of Kalona, Iowa.

WALLACES' FARMER, DES MOINES, IOWA.

(Issue of September 4th.)

The fair season is on, and if the future can be predicted from the opening at Des Moines last week, it will be even more successful than usual. Never before has the Iowa fair offered so much and such a variety of entertainment and instruction. The regular fair exhibits are superior, both in quality and arrangement and convenience of access. Courses of lectures on all sorts of topics of interest to farm folk are given each day in the different buildings, and the amusement features—some excellent and some not so good—are sufficient to provide entertainment and relaxation. On Friday, the first real visitors' day, the exhibits were practically all in place. Thursday night and Friday morning, a gentle rain rather discouraged the attendance of some folks, but Friday was children's day, and the children of the city were out in force, with the result that by the time the sun came out, about noon, the crowd seemed about as large as on some of the principal days a few years ago. The rain delayed many within fifty miles of Des Moines, who had intended to drive in by auto, but a number of hardy spirits plowed through the mud, and said it felt good to experience a real rain and feel real mud once more.

Monday opened with threatening weather, and this, together with the preceding rain, must be held accountable for the lessened attendance—about 20,000 less than Monday of last year. By the middle of the day the sky had cleared, however, and it proved a very satisfactory day for those who came. Monday night, however, the clouds which had advanced and retreated during the day, marshaled their forces, and about eight o'clock descended in force, with driving rain and high wind. Tents were blown down, glass was broken, loose timbers were thrown about, to the injury of several people; branches of trees were torn off, electric wires were blown down, plunging both the fair grounds and many parts of the city in darkness. Thousands who had remained on the fair grounds for the night shows were drenched to the skin and spent several uncomfortable hours before they could get back to the city. In some places there were near panics, but the guards were hurriedly called out, and with their efforts serious trouble was averted. A large tent in which the overflow from the horse barns was sheltered was partially blown down, and prompt work was necessary to control the valuable horses and get them safely into the live stock pavilion, where they were kept during the remainder of the night. A number of employes of the entertainment shows were seriously injured by falling tent poles, and the doctors and nurses on the grounds were kept busy for several hours. The street car service to the city was put out of commission for several hours, and thousands of people were compelled to remain at the fair grounds until near midnight. Early Tuesday morning the damage on the grounds was fully repaired and everything again ready for business. The storm, however, with threatening weather again Tuesday, will undoubtedly cut short the attendance this year. No matter how dry the season, if there is any moisture at all in the air, the state fair may be depended upon to jar it loose.

Being the first of the larger fairs, Iowa has always been fortunate in her live stock exhibit. All of the western show herds meet here for a preliminary try-out, and then separate, some going to Nebraska and some to Minnesota, to come together again later in the season. The stock show this year has probably never been surpassed, and as stated by our live stock experts was of distinctly international character. Both the cattle and horse shows were wonderful exhibitions of the art and skill of the breeder and feeder. Barn accommodations were quickly found to be inadequate, and it was necessary to house many of the valuable animals in large tents erected for the purpose. A very gratifying feature of the live stock exhibit is the large number of Iowa breeders who are showing herds fully able to compete with the best that have been brought in from other states. There can be no better evidence of the healthfulness of the live stock industry than is afforded by the show this year. While the report of the stock show can not be made complete in this issue, the results in most of the classes will be found in our report, and our readers are directed to it for details.

Somebody back in Washington has interfered with one of our real exhibits. For some years it has been the custom of many of our congressmen, state officers and members of the legislature to foregather at the fair, shake hands with the dear people, and lay plans for their political futures. It has really been quite an occasion. But some mean fellow back at Washington has spoiled it this year—in part, at least. Congress is enforcing the rule to "dock" members $20 per day for absence from their seats without a better reason than the desire to visit the folks in Iowa during the fair. So we will have to do without the congressmen. But the state officers and legislators will be here in all their glory, and their opinion about the war will probably be worth just as much.

Those who come to the fair with the serious purpose of getting the most for their money, will do well to lay out their time carefully in advance, and then stick as closely as possible to their program. There are so many distractions, and it is so easy to drift aimlessly from place to place, that one is likely to find himself at the close of the day with little stored away to show for the time and money spent. The early hours of the forenoon, and from three to six in the afternoon offer the best time to see the exhibits in the buildings; during the middle of the day the aisles are filled with people drifting through, and it is next to impossible to get near enough to see to any purpose or to talk satisfactorily to the exhibitors. That part of the machinery exhibit which is not under cover can be examined very well late in the evening. The middle of the day can be devoted to the live stock show and the amusement features that are worth while. Of the latter, some are entertaining, but time spent in some of the show attractions is worse than wasted. After incurring the expense of coming to the fair, the way to get it back with interest is to organize one's time and spend most of it where something is to be learned. The program of lectures and general entertainments will be found posted conspicuously in different parts of the grounds, and dates and places of lectures will be found in this program.

The Agricultural College building, up on the hill near the poultry building, is always worth far more attention than it gets. Thousands of farmers are going through this building every day, but too many give it but a glance here and there, failing to grasp the many interesting and valuable facts spread out before them in a way easy to understand. But now and then a real seeker after knowledge comes through. He stands before single exhibits a half hour at a time; he takes down figures with pencil and paper; and, best of all, he talks with the college men in charge of the exhibits. These young fellows know all about the exhibits under their care and are eager to tell all they can about them to those who show real interest.

In the Agricultural College building is an exhibit of lime and fertilizer. On request, the man in charge gives a list of Iowa firm's supplying ground limestone, and describes the different ways of applying lime. Different pieces of litmus paper are to be seen in contact with soils which need lime and soils which need no lime. Our readers are, of course, familiar with this test, but thousands of farmers are seeing it this week for the first time at the college building. In pans spread out so that they may be seen and felt are some of the common fertilizers, such as lime, rock phosphate, acid phosphate, bone meal, and compound commercial fertilizer. A practical Iowa rotation is indicated on a field divided into four plots, two of which are in corn, one in oats, and one in clover. Figures nearby indicate that at the Iowa station, during a period of eight years, or two rotations, they secured a total of 294 bushels of corn, 137 bushels of oats, and 5.9 tons of clover hay from the average acre, while when the land was in corn eight years continuously, they secured only 431.2 bushels of corn. In other words, with prices as they are now, the average acre under rotation produces each year an average of $5 more than the average acre in corn continuously. The soil map is always interesting. It shows the type of soil in each county, and figures above the map give the average amount of plant food in each type. In pans the different kinds of soil are spread out so that they can be felt and compared more carefully as to color and texture.

An interesting chart gives the results of investigations into the prosperity of over 100 Iowa tenants. Those tenants who stay five years or more on a place make an average of $1,877, as compared with $1,090 for tenants who stay three and four years, and $866 for those who stay one or two years. The tenants who have 1,000 pounds of stock for every four acres make an average of $1,650 a year, while those with 1,000 pounds of stock to twenty acres make $485. That the tenants who have plenty of money invested in stock, machinery, etc., make the most money is indicated by the chart figures, which give an average return of $2,053 to the average tenant with more than $5,000 invested in farming, while tenants with $1,000 to $3,000 averaged only $834 per year. Evidently the tenants who make the most money are those who stay on one place for many years in succession, who keep 1,000 pounds of stock to every four or five acres, and who have at least $5,000 invested in stock, machinery, etc.

At the Iowa station they have tried for many years past to determine the best varieties of small grains. Among the oats varieties, according to the exhibit on the east side of the college building, Silver Mine and Kherson have proved to be the two best, until a short time ago, when a new variety known as the White Kherson came into the lead with an average yield of 70 bushels per acre. This White Kherson was originated at the Iowa station by picking out a white sport of the yellow Kherson and breeding from it. Samples of these different varieties are on exhibit, together with information concerning the time of ripening, liability to lodge, etc. Among the varieties of barley, the Caucasion, Oderbrucker, and Manchuria are at the head of the list. Samples of these barleys are on exhibit together with information concerning time of ripening, etc. The Turkey Red, Kharkov, and Red Cross have ranked as the highest yielding varieties of winter wheat, until a new variety was recently originated at the Iowa station—known as No. 404—which has averaged four bushels per acre higher than the Turkey Red.

On the west side of the building, Professor Buchanan, in charge of the cooperative experiments for the college, has his exhibit. He arranges with those farmers who so desire to make cooperative experiments. For instance, he will send out a small amount of improved varieties of wheat or oats. Or he will give direction for an experiment with limestone or rock phosphate. By talking with men like this farmer visitors to the fair this week are learning many new things.

The wireless telegraph at the Iowa State College building was a new feature. The click of the instrument which flashed messages from the fair grounds to city newspapers could be heard for long distances. This was said to be the first use ever made of the wireless telegraph for newspaper purpose in Iowa. Demonstrators were on hand to explain the principles of wireless telegraphy, and the sending station was a point of general interest to hundreds of visitors daily.

One exhibit shows the different varieties of knots; another common Iowa weeds; and another some of the plants which may some day be grown on Iowa farms, but are not grown much as yet. For instance, there are specimens of field peas, soy beans, cowpeas, sweet clover, German millet, Hungarian millet, common millet, Japanese millet, and barnyard grass. By careful examination of these different exhibits it is possible for one to learn many new things.

In the poultry building the poultry department of the Iowa Agricultural College gives demonstrations every day of caponizing, killing poultry and dressing, handling eggs and grading them for market. Exhibits indicate the difference between the grade of eggs known as selects, the grade known as firsts, and that known as seconds. The selects sell for five cents more per dozen than the seconds, and for from one and a half to three cents more than the firsts, and it is the object of the poultry demonstrator to bring about the marketing of as many high-grade eggs as possible in Iowa. He wants wide-awake creameries to establish egg departments. He has been greatly encouraged in this work because one Iowa creamery, in taking this up, has managed to make $600 in six months over what the eggs would have brought if marketed in the ordinary way. The poultry demonstrator is worth talking to. He will tell you about the advantages of the different models of poultry houses that are on exhibit and the best ways to kill lice and mites.

In past years the state fair grounds have been policed by several hundred civilians from various parts of the state, whose appointment was secured for them by their friends among the officers of the state fair management. This year the management arranged with the state militia to furnish two companies of guardsmen for this duty. In their neat service uniforms they added a bit of military color to the fair. The companies selected were Company M, of the fifty-fifth regiment, from Red Oak, and Company F, from the fifty-sixth regiment, at Fort Dodge—these two companies standing the highest in the annual spring inspection conducted by the officers of the state guard. In addition to these two companies there were a number of picked men selected from some of the other companies to act as mounted police. In all, nearly 200 uniformed soldiers were on duty. The Iowa guardsmen are an efficient lot. They know how to obey orders and how to enforce them. Any brewing trouble was very promptly nipped in the bud. The crowds were handled in a splendid manner, and the success this year of using the guardsmen for police duty will certainly insure its being a permanent feature of the fair. Fewer men are required to police the grounds, and it can be and is done more effectively by the men in uniform.

A dairy farm, with buildings and stock, moulded from butter, won its share of admiration. The sculptor who did the work was Lawrence Stewart. Standing in the rear was the Goddess of Plenty, representing Iowa, holding an ear of corn and extending a hand of welcome. Three hundred pounds of butter had been moulded into a farm surrounded by fences, and including a home, dairy barn, silo, automobile, stock, watering troughs, and farm buildings. This was one of the attractions in the agricultural building.

An exhibit of confiscated weights and measures showed part of the work being done by this department of the dairy and food commission. The exhibits were part of a carload which had been condemned since the new law went into effect. With few exceptions all produce must be sold by weight. The net weight of the contents of a package must be stated on the container. The inspector pointed out to fair visitors how many consumers were being defrauded out of their just dues. One pair of scales exhibited had been taken from a poultry dealer who was only paying for twelve ounces for a pound as weighed by his scales. Others had been using liquid quart measures for the dry quart.

The local postoffice department had a display showing how to use the parcel post for mailing farm produce. Packages of fruit and other produce properly packed and stamped for shipment illustrated great possibilities along this line. The one in charge said preparations were being made for raising the weight limit and decreasing the charges. The last scales received from the government for weighing parcel post packages weigh articles up to 100 pounds, which probably soon will be the maximum limit, as it is in some other countries. Inquiry among farmers who stopped to look over the display indicated that many were using the parcel post for marketing eggs and butter, and that they were buying more or less produce through it. One local shoe dealer said it had enabled him to reduce his stock 25 per cent and at the same time give better service to his customers.

The Iowa counties with county experts, namely, Clinton, Scott, Muscatine, Montgomery, Black Hawk, Wright, Greene, Henry and Clay, this year have exhibits in the agricultural building. The exhibits are nice enough, but are practically the same sort of thing as the county exhibits of old days. The best exhibits are the county experts themselves. They are all bright, wide-awake young men of practical experience. The farmers passing through the agricultural building are finding it worth while to ask them questions. They are especially well up on such problems as hog cholera, alfalfa seeding, and insect pests. We hope that farmers from counties having no experts have talked with these men, so as to get some idea of what a county expert may be worth. There is a widespread opinion that county experts, being young fellows from college, are impractical men who have little information of value under actual farm conditions. In reality, the county experts are educated farm boys who have grown into their positions as county experts in a very practical way.

Many housewives stopped to study a display made by the pure food commission, showing the comparative values of foods with milk at eight cents per quart. The equivalent of a quart of milk in food values was exhibited with figures showing the cost. A quart of milk, according to the commission, is equal to a pound of cheese costing 9.5 cents; ten eggs costing 29 cents; eleven ounces of beef steak costing 15 cents; six and a half ounces of white bread costing 2.5 cents; five ounces of cornmeal costing 1 cent; nine and a half ounces of potatoes costing 2.5 cents; one head of cabbage costing 10 cents; five bananas costing 10 cents. The idea of the display was to show the economy of using certain foods during a period of high priced groceries and food products.

In a corner of the agricultural building the American manufacturers who make starch, sugar, oil, etc., from corn have an exhibit. It is very interesting to see with your own eyes the things which are actually made from corn in a commercial way. It is hard to believe that such substances as oil, sugar and rubber may be made from corn, and yet in this exhibit you may see them for yourself.

Fourteen individual farms have exhibits this year. These are good exhibits, showing much enterprise on the part of the farmers exhibiting. Nevertheless we wonder if the trouble of getting together such an exhibit is really worth while. It takes infinite pains and care to get together good samples of the different cereals, tie them up neatly, and arrange them in a nice manner. The result is good to look at, but from an educational standpoint is worthless. Some of it is good artistically, but for educational purposes it would be better to have the competing farmers make diagrams of their farms, indicating the rotation, the average yields, methods of fertilizing the soil and feeding the stock, method of marketing, and the net income. A score card could be drawn up to apply to a competition of this sort.

Just south of the exposition building is the building of the boys' and girls' club. During the past year this movement has become strong in the state, and at the present time many thousands of boys are in the corn growing contest and many thousands of girls are in the canning contest. In the building are many different things that the boys and girls have made. Twice daily some of the ladies in charge of the girls' canning work give demonstrations of the methods of canning corn, tomatoes, fruit and meat. They describe both the method of canning in tin cans and in glass jars. The few women and girls who have been attending these demonstrations have been much interested.

It is interesting to talk to some of the boy ushers. You will generally find that they are farm boys, and that they are camping this year on the fair grounds with a number of other boys—ninety-nine altogether, one from each county. They won the right to come to the fair because each one of them wrote the best essay in his county on the ideal farm. All their expenses are paid, but they pay back part of them by spending time each day ushering. This plan has been in use for several years, and seems to be giving good results.

The American Bible Society has an excellent exhibit of Bibles in the exposition building. They sell a complete Bible for 17 cents, and a New Testament for 5 cents. They supply Bibles in English, German, French, Danish and Swedish.

Aeroplane flights by Lincoln Beachey are big attractions. The daring aviator made reckless turns and shoots which thrilled thousands. His famous loop-the-loop was perhaps the most spectacular performance. He played hide-and-seek with the clouds thousands of feet in the air, going in and out of them with his machine under perfect control, and as unconcerned himself as though he had been walking on the ground. Mr. Beachey is popular, and is one of the most expensive features, his remuneration being $1,000 a day.

An industrial exhibit of the blind showed what remarkable things can be accomplished by those devoid of sight. Their method of writing is an interesting demonstration. It is done by punctures in a cardboard, one of which was given as a souvenir to anyone interested. The blind lady in charge could write almost as fast as a person with pencil and paper. The writing is read simply by pushing the fingers over the perforations.

Ninety-nine boys, whose ages range from 15 to 19, representing ninety-six counties, were guests of the fair association. The boys had a great time, and took advantage of every available minute. Last spring every boy whose age was within the limits was given an opportunity to compete for the trip with all expenses and entertainment paid for by the association. It was an essay contest, on the ideal farm. In each county, the boy who wrote the best essay, following the suggested outline, won the trip as a reward. In the stock judging contests, members of the camp won most of the moneys and honors. First and third places went to former members of the camp, while fourth and fifth places were given to members of this year's camp. Fourteen out of twenty-five first places were captured by these boys. The members had privileges of the grounds, but their able service in ushering at the baby show, stock judging pavilion, and all over the grounds made up for this. Games and amusements were provided, one of these being an indoor baseball league of seven teams. Each day a speaker gave a talk at the camp headquarters. Governor Clarke spoke Tuesday. Bryce Binnall, of Crawford county, had the best essay, according to the judges. On his return home each boy will write up his experiences and what he saw. The winner will be declared a delegate to the annual meeting of the state board of agriculture. Fred M. Hansen, of the Y. M. C. A., acted as superintendent. Arthur Runft, champion boy corn grower of the United States, was a member of the camp.

The boys' judging contests, which are held every year, are a most excellent idea. As a variation of this idea, we would suggest contests among the farm boys in rapidity of hitching up teams, in excellence of work in plowing, and in rope tying. Some of these events might be put on in the stock pavilion and made very interesting and also educational if the judges at the close of the contest would make a few remarks. Following are the winners in this year's contest. First, Clement Miller, Fairfield, 662; second, Leo Aldrich, Rowan, 640; third, Raymond Teachout, Imogene, 639; fourth, Bryce Binnall, Dow City, 618; fifth, Oscar McQuirin, Osceola, 614.

Frank C. Pellett, state bee inspector, moved his headquarters to the grounds during the week. Twice each day during the fair, motion pictures of the honey bee were exhibited at the college building. These were educational, showing how to manage bees and prepare honey for the market.

THE BREED SHOW.

Iowa's 1914 exhibit of pure bred stock sets a high standard for other state fairs which follow. Those who have been regular attendants at state fairs and leading stock shows do not hesitate to put it in the class with the international of Chicago. The horse show filled the barns to overflowing, and tents covering temporary quarters were hastily put up to accommodate the overflow. The pony show, which occupied the big stock show amphitheater on Friday was the biggest pony show ever seen at Des Moines, and perhaps the largest that has been seen at any state fair. The showing of draft horses was exceptionally strong, as specially mentioned, with the awards, elsewhere in this issue, and a late arrival of light horses and saddlers is adding interest to the fair, as this goes to press. Iowa is strongly represented in the stock show, but the exhibitors are from several different states. All departments of the stock show are well represented, and the showing is very satisfactory.

THE CATTLE DIVISION.

Over one hundred exhibitors of cattle have registered stock at the Iowa State Fair this week. This of itself is a big show, and the value of the stock runs into many thousands of dollars. It also requires much barn room to house it, and probably attracted more visitors than any other part of the stock show. There were usually three different breeds on exhibition at the same time in the big amphitheater, and big crowds witnessed the judging, which was in full operation Saturday, and continues as we go to press. There were thirty exhibitors of Shorthorns, sixteen of Herefords, thirteen of Angus, five of Galloways, eight of Polled Durhams, five of Red Polls, eight of Jerseys, seven of Guernseys, two of Ayrshires, and three of Brown Swiss.

SHORTHORNS.

The Shorthorns outnumbered all other breeds of cattle on the fair grounds, the standard of quality and condition was high, and it was easily one of the greatest showings of reds, whites and roans that has been made anywhere. Some good judges pronounce it a bigger Shorthorn show than was seen at the last International, which was unquestionably one of the best ever seen in this country. The judging commenced on Saturday, and the first class brought out ten herd bulls that were a very creditable lot. Leslie Smith, of St. Cloud, Minn., officiated as judge, and soon placed them in the order named below. The two-year-old bull class was the weak class of the show, there being only two entries. As this class is usually weak, it would seem that exhibitors would make more of an effort to bring out two-year-olds. The next class brought out some championship material. The Saunders Champion, Cumberland's Type, headed the class, but had the closest kind of competition in the Kilgour entry. Saunders was also a strong third with his other entry in this class. The junior yearlings, numbering fourteen, made a good, strong class, but the big show in Shorthorn bulls was the senior calf class of thirty-three head. It was a strong class in both quality and numbers, with some exceptionally good ones at the head of the class. There was some difference of opinion among the ringside talent as to the way they should be rated, but the massive youngster from Uppermill Farm, Wapello, Iowa, found favor with the judge for first place. The big, attractive strawberry roan, owned by Jos. Miller & Sons, Granger, Mo., was placed second, and, with some, was a favorite for first, although he has been growing too fast to be in the best condition to show. The third and fourth winners also attracted much attention, and with a difference of opinion as to their proper rating. The Bellows entry, which was placed fourth, was large, like the first and second winners, and a very rugged sort. Mention of the discussion of these good young bulls by the ringside is made, not to criticize the judge, but to show the interest taken in this class of good ones. Others down the line were also worthy of mention, if space would permit. The class of juniors was also strong and large, but did not excite the interest that the seniors did. The female classes were as strong as usual, and most of the classes were large, the young classes, in particular, comparing with the best young classes at the International. The aged cow class was headed by Wm. Herkelmann's last year's winner, Mildred of Oakland. The two-year-old class was headed by Lancaster Duchess 7th, the superior young cow shown by Anoka Farms, of Wisconsin, while Uppermill Farm, of Iowa, was a very close second with Village Flower 2d. The senior yearling heifer class was a good one of fourteen, in which Kilgour, of Illinois, won first with an outstanding show heifer sired by Fair Acres Sultan. In the junior class, Mr. Kilgour was again the fortunate winner of first, while in the calf classes the Cumberlands were at the top, the senior owned by Saunders, of Iowa, and the junior owned by Herr Bros. & Reynolds, of Wisconsin. The Iowa exhibitors were more numerous than they were several years ago, and made a strong showing for the state.

THE HEREFORDS.

The Hereford show this year was a high average of the good shows made by this breed for years. Exhibitors are here from several different states, a feature of the show being the strong exhibit from Mississippi, demonstrating that this land of cotton and cane can also produce the good beef cattle. There were some exceptionally strong show animals got to the head of the classes, and the show was quite uniformly good all through. The Iowa exhibitors, some of whom were out for the first time, had the strongest kind of outside competition, but won a share of the best prizes.

THE ANGUS.

The Angus show was not strong numerically, in comparison with the Shorthorns and Herefords, and did not represent the full strength of the breed. Mr. Battles, of Maquoketa, Iowa, had made entries, but is showing in the East instead, and W. J. Miller, of Newton, Iowa, is another who made entries and is not here. However, there were a dozen exhibitors in the Angus show, eleven of them from Iowa and one from Missouri. The breed is well represented in quality, although there is no Erwin C. out this year. The show is in progress as we go to press, with Silas Igo, of Indianola, Iowa, acting as judge.

POLLED DURHAMS.

The Polled Durham show brought out some of the best show animals that have been seen in recent years, but outside of these tops the showing of Polled Durhams was not specially strong. The classes were not large, and included some not well fitted. Mr. Stegelin, of Kansas, won both grand championships on very worthy specimens of the breed. Mr. Shaver, of Iowa, won junior championship on an outstanding calf of his age, a calf with an exceptionally fine poll, a smooth shoulder, and of good balance, type and quality. He had the strongest kind of competition, however, for junior championship.

THE GUERNSEYS.

The showing of this dairy breed, which is fast gaining in popularity, was unquestionably the best that has ever been made at the Iowa State Fair, if not the best that has been made at any stock show in the corn belt. Not only was the size and quality of the Guernsey exhibit good, but the size and quality of the animals on exhibition was a matter of comment. Wilbur Marsh, of Waterloo, Iowa, who recently added the entire Pierpont Morgan herd to his already valuable collection of imported Guernseys, was a very strong winner at this show, but had worthy competition.

THE HORSE SHOW.

War in Europe and drouth at home did not prevent the horse department of the Iowa State Fair of 1914 from making one of its best shows. The capacity of the barns was overtaxed, and a large tent was used to shelter the overflow. In character and quality, it was superior to many former shows, and, in numbers, was a surprise, when present conditions are considered. The show is well managed and runs on schedule time. The entire ring is given to the horses in the forenoon, the cattle showing in the afternoon. All four draft breeds are shown at the same time, which makes a very attractive and pleasing display—probably one of the best found in the entire fair circuit. Single expert judges placed the horses, beginning on all the mare classes. Saturday morning the Percheron and Belgian mare and filly classes were out in large numbers, the latter making the best showing we have yet seen at any state fair. The showing made by the Shires and Clydes stood high in character and quality, and reflects in a measure what is being done by the American breeder. The mare classes were specially interesting on account of a large number being American bred. This show should lend encouragement to the breeding of better horses, and those who were fortunate enough to see it have been shown high-class specimens of all breeds. American farmers should take advantage of their present opportunity.

LIGHT HARNESS AND SADDLE HORSES.

The love of the Iowan for a good horse was very clearly disclosed by the interested throngs which watched the showing of the gaited saddlers, gig horses, Morgans, ponies, high school horses, high jumpers, etc. The liberal premiums this year brought out a most excellent and a most entertaining exhibit. There is something about a good horse that rouses the enthusiasm of the Iowa crowd, even though it comes to the fair in automobiles.

THE HOG SHOW.

Iowa's big hog show, always the biggest of the year, is now in progress. The superintendent of the swine department reports that 952 pens were engaged by exhibitors. Not all who made entries brought their hogs, but some others needed more pens than they had engaged, so that the big swine amphitheater was pretty well filled. The Duroc Jerseys, Poland

Chinas and Chester Whites made up the bulk of the show, and these three breeds were of about equal strength numerically. It was the largest Chester White show that the breed has made. The Hampshires, Berkshires, Yorkshires, and Tamworths were the other breeds represented.

THE DUROC JERSEYS.

For several years now the Duroc Jerseys have led the other breeds in numbers at the Iowa State Fair. This year the breeders of this popular red hog again engaged the most pens, but there was very little difference in the number of reds, whites and blacks in the pens. The showing of Durocs this year was strong, although it hardly excelled last year's show for animals of outstanding excellence. The championships went to Waltemeyer Bros.

THE POLAND CHINAS.

The Poland China exhibitors at the Iowa State Fair this year made one of the strongest and most satisfactory exhibits this breed has ever made. There were more good big ones than ever, and the indications are that the big type Polands have made a place for themselves in the Iowa shows, and made it on merit, for the big ones that are winning now are not only big but are smooth and have show yard merit. The show opened Monday morning with the aged boar class, and the merits of this class called out as much favorable comment as any class of the entire show. It came near being the sensational class of the show, although there were good sow classes also. When the breed has as good herd boars as are indicated by the herd boars at this show, it means much for the future of the breed. We have heard of 1,000-pound herd boars, but it is not often that they have been winning the prizes. In this show the first prize aged boar actually weighed 1,000 pounds, and he had big company. Mr. Marker did the judging, and the exhibitors and breeders present gave him credit for doing a good job.

HAMPSHIRE SWINE.

The showing of this white belted breed of swine was good. Mr. Wilson Rowe, of Ames, Iowa, who did the judging, and has judged the Hampshires at the Iowa State Fair more than any other man, pronounced this show the best he had ever passed on, and stated that the first prize winners were especially good, and the competition in most of the classes close. He considered the group classes strong competition for any breed.

THE CHESTER WHITES.

The Chester Whites have taken their place as one of the strongest swine exhibits at the big Iowa State Fair. The exhibit ranked this year with the Durocs and Polands in numbers, with the possibility that when the actual count is made they will outnumber the other breeds. The Chester White breeders are quite jubilant over the steady growth their breed has been making. The judging was done by N. H. Gentry, of Missouri, and in commenting on the show, he said that there were some very fine specimens of the breed on exhibition, that were worthy of the best prizes, but that there were some on exhibition that were not first-class. When asked to state the chief fault he noticed in the latter class, that it might be published for the benefit of exhibitors and breeders who wanted to guard against these faults, he mentioned the feet and legs as being the most at fault, which can be guarded against by the selection of show animals with short pasterns and good legs. W. T. Barr, of Ames, Iowa, was the winner of grand champion boar, and was strong in the fight on sows.

THE BERKSHIRES.

The showing of Berkshires was better than usual, although not strong numerically. The Iowana herd, of Iowa, was especially strong in the winning, as indicated by the awards. N. H. Gentry, of Sedalia, Mo., tied the ribbons.

THE SHEEP SHOW.

The good feeling that pervaded the sheep camp at the Iowa State Fair this year was very noticeable. The show was good, one of the best that has been seen at a state fair, and the wool and mutton market is in better shape than it has been for years, so there was no trouble for a sheep man to "look pleasant" this year. The only complaint they had was the crowded, unsatisfactory sheds that cover the sheep exhibit. The management talked new quarters for sheep for some time, but the $85,000 that went into the new Women and Children's building compels the sheep men to wait until later. The fine wool breeds were offered more class premiums than before, and consequently made a bigger showing. The two silver cups for best Shropshire ram and ewe, home bred, went to E. L. Bitterman, of Mason City, Iowa, and Fawcett & Son, of Springdale, Iowa. The sheep on exhibition were owned by twenty-eight different men, or firms, and were from Iowa, Wisconsin, Ohio, Nebraska, and Wyoming. The mutton breeds were judged by J. G. Hammer, and the wool breeds by John Webb.

(Issue of September 11th.)

As indicated by our report in last week's issue, the Iowa State Fair this year in most ways eclipsed all previous records. Had the weather been less threatening, the attendance would very greatly have exceeded the high-water mark and when the final count was made Friday evening, it was but a few thousands short. Here are the figures:

	1914.	1913.
Attendance	273,640	280,462
Receipts	$181,520.74	$185,616.12

The following shows the attendance record by days:

	1914.	1913.
Wednesday	4,464	3,829
Thursday	8,916	8,608
Friday	26,964	33,020
Saturday	28,065	26,861
Sunday	22,092	25,211
Monday	40,839	58,045
Tuesday	41,871	66,465
Wednesday	46,761	40,972
Thursday	31,329	17,431
Friday	22,339	Closed
Totals	273,640	280,462

The decrease in attendance Monday and Tuesday can probably be laid to the weather. Rain Friday night and cloudy weather on Saturday no doubt held back many who had made their plans to come. Then came the storm Monday night, acompanied by a high wind, which did considerable damage to the larger tents. Sensational reports went out over the state, some of them to the effect that there had been a cyclone at Des Moines, and many of the principal fair ground buildings had been demolished. Many telegrams and long distance calls came from anxious friends at home who feared for the safety of their people at the fair. As a matter of fact, there was not a day of bad weather during the fair. Tuesday morning was cloudy and threatening, but the skies cleared and the days following were ideal.

The city of Des Moines took care of the fair visitors in a manner which left no reason for complaint. Two information bureaus were maintained, one on each side of the river, where courteous clerks furnished information of all kinds, and assigned rooms in desirable houses to all who wished them. The hotels and cafes took care of their guests at reasonable rates, and the citizens generally took pains to make the visitors comfortable and happy. In years past a few editors of county papers have tried to make it appear that Des Moines has taken advantage of the fair crowds to impose unreasonable prices. If there ever was foundation for this complaint, it was destroyed many years since.

There were no indications of hard times among the people who came to Des Moines. Everybody was cheerful, optimistic, and thankful that he lived in a country of peace and plenty. As to the Iowa corn crop, the greatest variety of opinion was expressed. Men from the southeastern counties complained of serious damage. One farmer said that in his county there were two or three good townships with prospects of over forty-five bushels per acre, but that most of the county would average under thirty bushels. Many reported that corn on clover sod fall plowed was the worst hurt. The northern part of the state seems generally good, although for the most part not up to last year. Several southern Iowa farmers were looking for a chance to buy corn in the north to ship home.

From the talk at the fair grounds, we judge that there will be a large seeding of winter wheat this fall. The cattle feeding situation did not appeal to most of the farmers with whom we talked. Some said that it was hard enough to make money out of 70-cent corn when fed to hogs, but that such corn fed to cattle meant sure loss. Many reported the sale of six-month calves at $30 to $35. The general impression given by talking with the average Iowa farmer is that of a prosperous man who has sized up his situation carefully. He may not know much about the science of agriculture, and it is good for him to brush up on that, but he is "right there' when it comes to the common sense of farming.

The board of control, in the exposition building, gave the people of Iowa a chance to see what the boys and girls of the state institutions are doing. Some of the blind illustrated how they read and write. Samples of needlework, woodwork, etc., gave an idea of the useful arts learned by the boys and girls in Iowa state institutions.

The Women and Children's building, centrally located and in just the best position to get the coolest breezes, was one of the big attractions to the women visitors. Here was plenty of room for resting and cooling off. Here was the glass room for the baby health contest. In the basement was an extensive child welfare exhibit, giving "do's" and don'ts" connected with the healthy raising of children. Illustrations and charts made this vivid. Outside, fenced off so that the children could have it to themselves, was a little playground for children of three to seven years of age, provided with swings, chutes and teeter-boards.

The ladies who had charge of the baby judging contest took their work very seriously. The babies were measured, weighed and examined most carefully, notwithstanding their vocal protests. Some of the mothers can learn a lesson from the stock showman, who spends a good deal of time training his animals to show-ring procedure before coming to the fair. If the anxious mother should accustom her baby to being handled by strangers, she would have a marked advantage over those whose babies are frightened. The baby show attracted much attention, and no doubt serves to teach improved methods of feeding and care. It can not, of course, do much to advance the science of eugenics.

Many agricultural college men get together at fair time. Some are with the exhibitors showing cattle and horses. Others report for newspapers. Others help in the judging and general management. A few are on hand simply to see the fair. Altogether there were probably 300 agricultural men at the fair, and most of them were at work.

Last year and the year before we had reason to criticise the fair management because of the character of some of the side show attractions. We are glad that the reasons for such criticism were not apparent this year. The side show features were not elevating, instructive or beneficial, but they were not nasty and positively corrupting, as they were last year. This is as it should be, and we trust that the improvement begun this year will be continued. In no state is the average of the citizenship higher than in Iowa, and a state institution like the fair should reflect the character of the people.

The machinery exhibit, as usual, was one of the most educational features of the fair. Nearly every man who visits the fair feels it his duty to see the machinery every year, in order to keep abreast of the recent changes. There were models of some seventeen silos, which must all be looked over to determine any important modifications. There were of course the usual number of gas engines, windmills, lighting outfits, and the hundred and one other things which we always expect to find in the machinery exhibit, but which we never tire of examining year after year. The men in charge of the machinery exhibits, while out for the dollar, gave valuable information as to the cost and practicability of the machines in which they were directly interested. The machinery exhibit this year was certainly worth while, despite the absence of many big concerns. One of the finest things about it was the fact that the larger part of the machinery was made here in Iowa. Never before has the machinery exhibit been so truly representative of the state.

A characteristic feature of the Iowa fair is the evenly scattered crowds. Unlike some of the other big fairs, the people do not seem to congregate at one place and then go to another. Instead of this overcrowding, a fairly large gathering would be at the stock judging pavilion at one time, at the same time another group would be in the agricultural building, another at the State College exhibit, another taking in the midway attractions or the races, and so on. A visitor from another state said that few could see anything at some other fairs, because all wanted to see the same thing at once, and consequently could not see nearly so much as would be possible with more evenly scattered crowds.

East of the fair grounds was a live city of campers. Officials estimated there were more than 8,000 camping on the grounds, this exceeding all former records. About 1,100 heads of families registered, but each registry represented from five to eight persons and there were many who did not register. A few years ago the campers came mostly in covered wagons, but this year a covered wagon was a curiosity. There were a few, but automobiles had taken their places for the most part. Families came to enjoy the fair and have a good time. Many from the same neighborhood would pitch their tents close to each other, and hold get-together meetings when not viewing the exhibits. One woman brought her sewing machine, and others who thought their home work could not be left behind brought it along. The round-up took place each morning, when each one in the camp had to present a ticket. In order to encourage camping, the fair management offered special rates of admission for those wanting these privileges for the entire fair.

A fife and drum corps, composed of Civil War veterans, gave daily concerts. Clad in their blue uniforms, and playing the old war tunes which gave inspiration to victorious armies years ago, they made one more keenly appreciate a spirit of patriotism. They were not so spry as they once were, and their hair was of a whiter color, but they put their old time spirit into the music as they marched up and down the roads within the fair grounds.

Live stock entries this year exceeded those of last year and of every other year in the history of the fair association. This year there were 137 horse exhibitors, with 1,143 entries, as compared with 145 exhibitors and 993 entries in 1913. In the cattle show this year 104 exhibitors had 1,188 entries, while last year there were only 77 exhibitors with 945 entries. The hog show was larger also, and the sheep were fully up to last year in numbers.

Professor L. H. Pammel, botanist of the Iowa experiment station, took occasion to tell about the work he is undertaking to gather information on the honey plants of Iowa. This lecture was given at the bee keepers' headquarters. Professor Pammel pointed out the importance of the honey bee both as a producer of honey and as a benefit to the horticultural interests of the community. He is going to make a detailed study of the honey plants of the state, the investigation to cover three or four years, and he wants the cooperation of the residents of the state. He especially desires to get specimens of honey plants and information stating their abundance and value. A special question sheet has been prepared for distribution, and all willing to assist in the work should write to him for a copy. His address is Ames, Iowa.

The fruit exhibit, while perhaps not up to the usual standard, was creditable in view of the unfavorable season for fruit in this state. The entries were mostly made by orchardists who spray and take care of their orchards. Their splendid exhibits had been possible on account of this extra work given the orchards. All predicted that apples would be high this fall, and few exhibitors had much fruit to offer for sale. The display of boxed apples was good, and a demonstration in boxing showed how to do the packing and sorting properly. One box of apples packed from last season's crop was in fair condition, but had begun to show signs of its age.

The parade of prize winning live stock was one of the biggest features of the fair. It was held Thursday evening, and was scheduled to start at 6:30. Unfortunately, it was delayed until nearly dark, and the crowd did not get the full benefit of it. It was a magnificent display and was properly called the "million-dollar parade." It was, without a doubt, the best parade of live stock ever seen in Iowa or at any other fair in the central states.

One of the best improvements on the fair grounds this year was the building of a double subway under the race track. This permitted the free passage of vehicles to and from the center of the race track without any interference with the races, or endangering the lives of those whose business took them back and forth across the track. It is a feature that other state fairs might well imitate.

A splendid cooling paddock is another new feature at the state fair. It is just west of the amphitheater, and contains stalls for twenty-five or more horses. The horses entering the races each day are stabled in this paddock convenient to the track. It facilitates the racing, and avoids the tedious delay which characterizes the usual state fair races.

The state fish and game department made a small but interesting exhibit at the game farm on the east end of the fair grounds. The state game warden, Mr. Hinshaw, has charge of the headquarters. The state department is promoting the stocking of private fish ponds as well as the state waters of Iowa. They are also establishing large game preserves in various parts of the state, where adjoining land owners will agree to keep off trespassing hunters and give a little attention to the preservation of native and imported birds. A number of Hungarian partridges and pheasants have been sent out through the state for stocking purposes, and the department is working earnestly to co-operate with land owners in a stricter enforcement of the state game laws.

The refreshment stand men found it heard sledding, and only a few of them broke even or made any money on their business venture at the fair. The lessened attendance and the increased number of refreshment stands must be held responsible. The crowds were well taken care of, and there was a decided improvement in the sanitary conditions under which refreshments were served, but in a number of instances conditions could have been much better.

Black Hawk county was awarded the blue ribbon for the best display of county products. Its county agent, Mr. A. A. Burger, had more than 400 different products grown in the county. This included, of course, different varieties of the same produce. Strawberries of the ever-bearing variety were on display, as well as both kinds of raspberries and blackberries. There were all kinds of tree fruits, grains and farm produce. Other county exhibits were along the same line. Henry county won second place, and Scott county third. The county booths served as a general meeting place for visitors from each county. The agents kept a registry where all guests from the county could register.

The horseshoeing contests held just north of the main horse barn attracted considerable attention. The blacksmiths who entered had to build a fire, make a pair of plate shoes from bar iron, and put them on in good shape. Several completed the work in less than an hour. Premiums were awarded on the basis of good work rather than speed. It was an educational feature worth while, and will doubtless be made a regular feature of the fair.

SADDLE AND SHOW HORSE CHRONICLE, LEXINGTON, KENTUCKY.

BY HERBERT J. KRUM, EDITOR.

While the county fairs have been in full blast for several weeks in Kentucky and Missouri and the eastern shows have been staged on the Virginia circuit the first of the horse shows on the state fair circuit found its opening session at Des Moines in connection with the Iowa state fair. Being the first of the series, it naturally commands an unusual importance and also enjoys a patronage that is scarcely true in like degree of any of those which follow. But in addition to the favorable position it occupies on the time schedule, the Iowa institution has other advantages which give it a commanding postion. The fair is admirably supported by the state board and is able to indulge in educational advantages for the people with a most lavish prodigality. Iowa is a rich and prosperous state and her state fair is regarded as an institution belonging to all of her people so that it is not only solidly grounded from a financial standpoint, but enjoys, as well, the substantial and highly important united sentimental support of her public.

Also it is most superbly officered. President C. E. Cameron, of Alta is an all round adept in conceiving and carrying out big projects and his firm hand in directing the many phases of the mammoth affair is perceptible in every direction. Ably and serenely occupying the chief executive position, Secretary Corey is the most unruffled official possible to conceive. Nothing worries or disturbs his composure and the thousand sided machine he directs works as smoothly and with as little friction as the most perfectly balanced and delicately adjusted piece of mechanism. He is never in a hurry and with countless scores of demands upon him, he has time, patience and a prompt and low voiced answer for every one. Perfect mastery of detail and most palpable evidences of far reaching executive and administrative abilities make themselves felt in every part of the Iowa state fair. In the horse department this fair enjoys what is of course an advantage not duplicated at any other in the country for nowhere else is it possible to have as superintendent of horses such a man as Dean C. F. Curtiss, of Ames. He is a veritable gaint in intellectual stature and of tremendous creative power in reducing multifarious and magnificent projects to an orderliness and system bordering closely on perfection. He has surrounded his department, too, with a corps of able assistants and C. N. Arnett, of Ames is one of the best qualified men in personal charge of a show ring to be found anywhere in the country.

Of first importance is the amount of money "hung up" for the horsemen to compete for. Of course as draft horses are the great glory of Iowa's live stock interest and wealth it is natural that the heavy horses get a very favorable consideration, but the light horses fare well also and the horse show end of it has become the real "pet" of the Iowa management. The total sum set apart for the show horses is $12,000 and following the custom which has been growing in favor since it was introduced by The Chronicle in the saddle horse colt stake, the multiple division of premiums is followed and in most of the events five owners participate in the money winnings. This recognizes the fact that it costs the owner of the horse that gets no better than fourth or fifth place, just as much for shipping and feeding as it does the owner of the first and second prize winners and he gets something against his expense account. This is not done at the cost of the leading winners for the first premium is $50 in most classes and in many of them more than that sum. This year, too, Iowa has added the "Big Stake" idea for five gaited saddle horses and $1,000 is hung up as a feature. The classification is broad and comprehensive, the weakest point being the breeding classes for young stock which the show events practically replace as it would be almost impossible to get a representative lot of exhibits in a community where but little such stock is as yet being bred and where, therefore, it would be necessary for such long shipments to be made as would render it out of the question. But with such exhibits as were seen in the show classes the breeding of these animals is certain to be given a great impetus and then breeding classes will be provided.

Facilities for showing are admirable at Des Moines. The grounds and buildings are adequate and the transportation arrangements leave little to be desired. Programs are arranged into morning, afternoon and evening sessions. The two former are shown in a special new open air arena opposite the immense grandstand and across the track. This show ring is reached via a subway under the race track and, while it is somewhat distant from the audience, there are no obstructions to the view, and the horses have excellent opportunities for showing to the greatest advantage. The evening classes are held in Live Stock Pavilion, which has only the objection of being circular in shape so that the horses are on "the turns" all the time and the ring is too small for the most advantageous display.

Judging was in most competent hands at this fair, the complete list of officials being herewith presented.

HORSE DEPARTMENT.

Superintendent Charles F. Curtiss, Ames, Iowa; Assistant Superintendant Charles Rinehart, Dallas Center, Iowa; Assistant Superintendent Don L. Berry, Indianola, Iowa; Assistant Superintendent C. N. Arnett, Ames, Iowa; Manager Live Stock and Horse Show, Thos. W. Bell, Chicago.

JUDGES.

Percherons, R. E. Drennan, Canora, Sask., Canada; Clydesdales, Donald Campbell, Hannaford, N. D.; Shires, R. B. Ogilvie, Chicago, Ill.; Belgians and Mules, W. J. Kennedy, Ames, Iowa; Suffolk Punch, W. J. Kennedy, Ames, Iowa; draft geldings and mares, R. B. Ogilvie, Chicago, Ill.; ponies, W. A. Dobson, Des Moines, Iowa; saddle horses (five gaited), Porter Taylor, Montgomery City, Mo.; standard bred, Walter Palmer, Ottawa, Ill.; American carriage, Walter Palmer, Ottawa, Ill.; Morgan, W. A. Dobson, Des Moines, Iowa; Arthur G. Leonard, Chicago, Ill.; Thos. E. Wilson, Chicago, Ill.; harness horses and hackneys, George Pepper, Toronto, Canada; W. A. Dobson, Des Moines, Iowa; Walter Palmer, Ottawa, Ill.; hunters and jumpers, George Pepper, Toronto, Canada; steeple chase races, Thos. E. Wilson, Chicago, Ill.; George Pepper, Toronto, Canada; military horses, Gen. James Rush Lincoln, Ames, Iowa; horseshoeing contest, Dr. Jack Seiter, Libertyville, Ill.; R. B. Ogilvie, Chicago, Ill.

Of these, most are well known to our readers. Porter Taylor has come into a well deserved prominence as a judge during the past two or three seasons and his utter fearlessness, absolute impartiality and disregard to ownership and all other considerations, excepting only individuality and performance, together with his high standards of excellence, make him an ideal show ring arbiter. He acted in the five gaited divisions, as usual. George Pepper, of Toronto, is better known in this western country as one of the most successful exhibitors than as a judge, but no man has a wider fund of practical experience, from every angle of the game, and his decisions were marked by careful consideration and the nicest possible discrimination. How any man could be better qualified is difficult to imagine, and the complete satisfaction with which his decisions were received by all proves his fitness for such tasks. Walter Palmer is easily in the front rank as a popular judge, and he fully justifies the high esteem in which he is held by both exhibitors and managements. His work is conservatively, carefully and promptly done, and few men have ever tied ribbons for as long a period as has the popular Ottawa official and made as few questionable decisions, much less downright mistakes. Of the other judges, as judges, perhaps less is known, though undoubtedly the manner of their performances here will be the cause of their being requisitioned much more widely in the future for their services.

Two absolute essentials are requisite in show ring judges. One, of course, is perfect impartiality and integrity which is beyond being influenced and the other is competent judgment and discernment comparable to present day conditions. Ignorance, or incompetency of any kind, are as fatal in their results as downright dishonesty or crookedness. If a judge could be suspected of being "approached" every one might have an equal chance to get to him, but there is no protection from, nor remedy for, stupidity or ignorance, and judges must be selected for their complete fitness for the job. Wm. Dobson, of Des Moines, acted in pony classes and in concert with Messrs. Pepper and Palmer in harness horse events. For many years Mr. Dobson was the leading Western dealer in heavy harness horses and probably discovered and brought out more animals that later became celebrities in the show ring than any other man in the business. To this astuteness show ring history owes the incomparable champion, Lord Brilliant, and three of celebrated $20,000 four-in-hand which Tichenor & Co. sold Alfred Vanderbilt were discovered and handled by Mr. Dobson. In passing, one wonders what has become of Rustling Silk, Full Dress, Polly Prim, and the others of that wonderful collection that made history in the last part of the former century and the first part of the present one.

It is noted in the foregoing list of judges that the names of two gentlemen appear that are practically newcomers as show ring officials. Thos. E. Wilson was present, assisting George Pepper in placing the ribbons on hunters and jumpers, and Mr. Arthur G. Leonard was assigned to the Morgan breeding classes. Mr. Wilson is an enthusiast on riding hunters and owns a number of them that have won at prominent shows. He is chairman of the South Show Club Horse Show of Chicago, and, in a business way, is the directing head of Morris & Company, a firm not entirely unheard of in almost any part of the world. In the case of Mr. Leonard, it is surmised that his acceptance of the judging of Morgans was a bit of pleasant euphemism for a sadly needed relief from his onerous duties as the head of that gigantic enterprise included under the general title of The Union Stock Yards and Transit Co. of Chicago. Morgan horses have been an example of diminishing greatness in this country, but behind all of the great live stock shows of America is the immeasurably modest but equally measureless genius and dominant personality of one of America's really great men. Unobtrusive, and rarely in the spot light of publicity, nevertheless millions of money and the daily destinies of countless thousands of men are affected in no small degree to their constant betterment by the brilliant brain, far seeing sagacity, sterling character and patriotic citizenship of Arthur G. Leonard.

No account of this show would be adequate without proper credit being given to the real director of its practical presentment. When one attends the theater, there is, somewhere behind the scenes, unseen and unheralded, one in whose hands the whole movement of the affair is placed and upon whose ability the conscious feeling of perfect satisfaction of the audience depends. Just so with a big horse show. When the show goes smoothly, with a lot of "pep" and ginger, one class in as another goes out, and time schedules running like a railway time card, it is very likely that Thomas W. Bell of Chicago is standing just on the edge of things, as he was at Des Moines, and as he has been since before the days of the old Chicago Coliseum shows. In a class by himself and without an equal.

EXHIBITORS AND THEIR HORSES.

In the harness horse division competition was largely confined to the stables of Mr. and Mrs. O. J. Mooers, of Columbia, Mo.; John R. Thompson, of Chicago; George J. Peak & Son, of Winchester, Lll.; Houchin & Anderson, of Jefferson City, Mo.; Chas. E. Bunn, Peoria, Ill.; A. L. Champlin, Ames, Iowa, and a number of others who had occasional entries as well in these events as in others where they fitted more properly. The real contests were between Mooers, Thompson, Peak and Houchin. Mooers' stable was fairly complete, with an even dozen head, ten of which fitted into the various harness events, he frequently having three entries in a class, and not infrequently leaving the ring with three premiums, which, more than once, were first, second and third. Advance Guard was his best winner, finally landing the championship. This is a well known horse, registered in both the standard bred and Morgan registers, and was formerly owned by A. T. Cole at Wheaton, Ill. He has been a consistent winner for many seasons and has never appeared to better advantage than he did in this show. It seems proper to say that Mooers must be a remarkable care taker and conditioner, for all his horses are in fine fettle, have that rare bloom of perfect health and good spirits, and are singularly free from unsoundness and blemishes. This is the more remarkable when it is considered that several of the horses in his stable are real old-timers that have served a long career on the tanbark and some of which were thought to have become second raters years ago. There is Gallant Lad, ex-member of that famous stable of Lawrence Jones, of Louisville, winning frequent championships and being about as frequently "gaited," or getting nothing, all of a decade ago, and having an unenviable reputation as an outlaw that must be permitted to have his own way and on no account to be crossed and in the hands of Will Roberts, one of Kentucky's most adroit horsemen, he now parades under the name of The Count, and Mooers must be given credit for having broken him, for, although he occasionally manifested his old-time propensity to war dance instead of trot, he stood quietly enough when lined up and submitted to having ribbons placed on his brow band without the least indication of his sometime former habit of plunging through the judges' box just as they had about decided to give him a blue string. Nor has whatever process that has been applied to his rejuvenation been one that constituted breaking his heart, for he has frequent flashes of that old-time brilliancy of action, speed and air that made him, in the old days, a real champion when his evil disposition did not operate to his disaster. Two other members of the former Jones stable are still in Mooers' hands, Royal Regent and John Alden, the latter now being called Chocolate Soldier. The Spring Maid, in the handsome bay mare that was formerly owned by the former well-known horse show exhibitor, Mrs. Jarvis Hunt, of Chicago. She is now nine years old, and her breeding is: Sire, Rene Russell; dam, Genola, by General Hancock. Hallie's Comet is the Maid's mate in the pairs, and I know nothing about him. Pick of the Basket and Dainty Maid are two new ones that Mooers bought somewhere last winter. They are said to be Hackneys, the former out of a mare by the great trotting sire, Chimes. They are a very nice pair with finished action, step and manners. Mr. Mooers had the invaluable assistance in showing his horses of Mrs. Mooers' driving, and she is certainly one of the most capable reinsmen before the public, and one of the greatest ring generals, knowing just what to do, when to do it, and when to stop doing it. In a number of classes, the daughter, Miss Charlotte Louise, drove, this show constituting her debut in horse show circles, and she made a very graceful, charming picture, and not at all an inadequate contender for the highest honors. In one point Mooers seems to be open to criticism (though perhaps not more so than some other exhibitors), and that is in the inordinate length of toe which he inflicts upon some of his horses. It is creased by excessive length of foot, and some of Mooers' horses, as, for example, The Spring Maid, had so much too much foot that it was almost certainly a long since exploded fallacy to think that high action is in-a deformity and lessened, rather than increased, her chances. The proof is in the fact that Mooers lost several valuable prizes, including a number of firsts, that this mare would clearly have won from the fact that her shoes could not be kept on her and she flung them off as fast as a smith at the ringside could tack them back on. Others of his horses were the same way, and in one class all of his entries had shoes off, one after the other, until there was a miniature pile of iron where they were collected. "There's an overdoing of doing that sometimes proves an undoing," and the matter of letting the foot grow so long that there is nothing but dead horn to nail to is as bad as cutting the hoof off so short there is danger of the nails pricking the quick.

John R. Thompson, of Chicago, restaurateur, was represented by his four familiar horses, Pride o' Prides and Oakwood, Ebony Girl and Lovely Lady, and also by a new grey gelding that was secured from Mat Biers at Mendota, Ill. He is a horse that has raced some under the name of Buster M., and is said to have a record of 2:20 and a fraction. He made his only appearance in the four-in-hand class and looks to be the making of a pretty high class show horse. These horses were in charge of Edward White, and he did extremely well with them and made a host of friends by his efficient horsemanship and pleasant manner, taking his wins without undue exaltation and his losses without any wrangling and unpleasant criticism, although in one or two classes he, perhaps, had some grounds for questioning the entire justice of the decisions. He had also in charge the handsome roan gelding, Jack Tar, owned by William Daniel, and hitched him in with the others in making up a four one afternoon. He was far in the lead as a blue ribbon winnner, getting fifteen firsts, out of twenty-seven shows, and nine seconds. Houchin & Anderson failed to make many harness shows, for some reason. The well known Sporting Extra was shown once or twice, but was not highly rated by the judges. From some accidental cause he has lost practically all of the hair from his tail and the dock made a sorry looking appearance, though he put up a couple of corking good shows. Mrs. Champlain, of Ames, Iowa, had a pair that were attractive in appearance, rivaling their owner in this respect, but, unfortunately, one of them seemed to show a trifle lame and they were scarcely up to the excellence of the Mooers and Thompson entries.

In the pony division the chief rivals were Bunn, of Peoria, Ill.; George A. Heyl, of Washington, Ill., and Mrs. Adam Stirling, of Des Moines, Iowa. The showing of these animals was particularly strong and any quantity of good ponies were constantly in evidence. Honors were pretty evenly divided between them, Heyl getting the single championship, with King Larigo, and Bunn the pair event, with Grandee and Ovilta. If any one thinks the partizanship for one's entries is confined to saddle and harness horse owners and exhibitors, conversation with the pony owners will prove that the former have no monopoly on the commodity.

Saddle horses were naturally a very strong feature of the show and many of the best in America were in evidence. The following were the leading exhibitors in either, or both three and five gaited classes: Houchin

& Anderson; Miss Loula Long, of Kansas City; Hamilton Bros., Keota, Iowa, Blades Bros. & Holman, Holliday, Mo.; C. E. Monahan, Des Moines, Iowa; Ed. Moore, Columbia, Mo.; O. J. Mooers, Columbia, Mo.; Robert Barnes. Oskaloosa, Iowa; William Daniel, Chicago; Bruce Robinson, Riverside, Iowa; Ed. Uhrich, Kansas City, Kan.; Wm. C. Seipp, Chicago, and Fred Williams, of Barnes City, Iowa. Tom Bass, of Mexico, had entries, but for some reason was not present. In the aged stallion, Astral King, Kentucky's Best, Art Bonta, Fitz Boy, Montgomery, Artis Mont Rose and Majestic McDonald were the leaders. Hook had My Major Dare with him, but elected not to show him, though the small ring and the night shows ought to have just suited Hook's idea of where the Major shows to best advantage. He will probably not show this horse until the Springfield, Ill., stake. Three-year-old stallions were not in evidence except Robinson's Kentucky Champ Clark, a very good doing son of Bourbon Star. The two-year-old class brought out Miss Long's Garrard Hunt, a son of Murphey's very fine Chester Dare stallion, Garrard Chief, this colt being placed above Moores' Comedian, a very attractive son of Red McDonald.

The mares were shown with geldings in the over-two-year-old classes and several extra good ones were seen. The aged class brought forward Paul Brown's handsome chestnut gelding, Johnnie Jones, as the winner of the event, with Del Holman showing him. He was second in the combined class to Kentucky's Best, and third in the $1,000 stake to that horse and Astral King. This is a coming champion, if I mistake not, for if he be forgiven for a somewhat abrupt slope of rump, he possesses about all the requisites for a high class winner. He has the air, splendor and carriage and ability to do a lot, though he is not yet at the full fruition of his speed and gaits. This is a horse for which I predicted a bright future last fall at the Missouri State Fair, though at that time he was thin and poor, and lacking in training, but he gave evidence then of maturing into a brilliant specimen of the five gaited sort. He was bred and shown by Buckham Bros., of Monroe City, and is accredited to that firm's great show horse, Bob McDonald. Of Nickle Plate, the gray gelding of varying fortunes, it is needless to recount his well known story, though his greatness appears to have departed in spite of the fact that during the week he made one or two excellent shows. Among the aged mares, those most prominent were Maurine Fisher, Czarmira, and Golden Go and Cleo Grand McDonald from the Miss Long stable; Helen Hicklin, from the Houchin & Anderson; Helen Idlewood, owned by the Minnesota State College, and shown by Mooers, and Miss Cliff, owned by Luchsinger Bros., at Monroe, Wis., and shown by Ed Moores. Among the younger mares that were especially worthy of note are My Idol, in the Blades & Holman string; Polly Ann, from the Houchin & Anderson; Vernon Castle, Blades & Holman, and Eloise Thornton, owned by the estate of A. S. Burr, of Bement, Ill., and shown by Ed Moores. The two-year-olds were pleasing, Blades & Holman having a daughter of My Major Dare, called Butterfly Dare, and Houchin a beauty called Lady Astral, by Astral King, and Miss Long a nice filly called Virginia Mayla, by Rex King, the good stallion that Paul Brown has used in St. Louis for his riding horse for a number of years, and also as a sire. Several local horses were of uncommon merit and well shown.

Three gaited saddle types were numerous and of great excellence, a variety of different types being brought before the judges, which necessarily caused some little confusion as to the kind of horse being ridden at walk, trot and canter that is most likely to obtain favor in the West. There were three regular classes and one combination class. As is generally the case at Western shows, quite a number of five gaited animals were shown in the three gaited division, some of the owners taking the short cut of cobbing the tails in order to present the appearance of a docked animal. Mares and geldings of any age were shown together. There was a mare and gelding class requiring ladies to ride, a stallion class for horses any age, and a combination class for stallion, mare or gelding. Miss Long's well known chestnut mare, Nancy Garland, by Kentucky Artist, was the winner in the events in which she was shown. She won the combination class with John Hook in the saddle. Houchin & Anderson's Pauline Moore getting second. Blades & Holman third, with Mary Dowling, the Princess Charming, from the O. J. Mooers stable, fourth. William C. Seipp, of Chicago, was represented by his thoroughbred type, Gay Deceiver, which was not especially favored by the judges. William Daniel, of Chicago, had an entry in Tommy Atkins that, I understand, has not been shown heretofore, and which made a rather pleasant impression, especially in the ladies' class, where he was ridden into second money by Miss Hazel Ritchie. Blades & Holman had a good entry in the young mare, Maxine, and O. J. Moores showed his fine Bourbon King mare, Princess Charming, winning the ladies' class with Mrs. Rasmussen in the saddle and hurting her chances for higher honors than fourth in the combination event by an untimely display of bad manners. This mare is out of the famous old Helen Walker, that was formerly owned and shown by Mr. Moers and he also had an entry, in the gray mare called Gracie Gray, of good conformation and considerable action, but whose manners were far above reproach.

Roadster classes furnished some of the best contests of the week, and the brunt of the battles in these events were between George R. Peak, of Winchester, Ill.; Ed. P. Urich, of Kansas City, Kan.; Houchin & Anderson, Miss Loula Long, and several local entries. Probably the most exciting ring of the entire week was the roadster pair class, which had five entries. Trev. Anderson, showing Billy Woods and Hastings Girl; George Peak, showing Tommy Doyle and Tommy Piper; E. P. Uhrich, showing Stevie C. and Mate; O. J. Mooers, showing Helen Idlewood, and Lawrence Barrett, and one of Peak's men, showing his Duke's Lassie and Devil's Dare. As everybody knows, in the horse show field, Tommy Doyle is one of the most consistent winners, and it is generally conceded that there are few pairs that can beat the two Tommies driven by their owners. On the other hand, Anderson has won countless prizes with his mare and gelding, and shows them to the greatest possible advantage. Considerable feeling was stirred up over this class, which was finally won by Anderson, with Peak second, and Uhrich third, Mooers getting fourth and the other Peak entry fifth. The class was judged by Pepper, Palmer and Dobson, and a very thorough try-out was given before the preliminary line-up. Sent back for a second work-out, Anderson led off the reverse way of the ring, this being a bit of show craft that places Anderson in the front rank of ring generals. It put Hastings Girl on the long way of the journey, giving her the outside of the ring, and going this way, it is impossible to drive her off her feet, and she can out-step almost any half a pair that is ever hitched. Anderson clearly out-drove Peak the wrong way of the track, and Peak had a further disadvantage in the fact that in the premiminary the right way of the track his pair did not get to show the full extent to which they are capable. Peak is always good natured and an unruffled loser, but he evidently had some feeling in this case, for he was heard to remark that "Nobody ever heard of races being won the wrong way of the track."

Tommy Doyle won the Reverse Championship for harness horse, the championship, with both the stallion and the mare or gelding class going to O. J. Moores, the former on Advance Guard and both the Championship and Reserve on Spring Maid, driven by Mrs. O. J. Mooers, and The Count, alias Gallant Lad, driven by Mr. Mooers.

Hunters and jumpers were, for the most part, a distinct disappointment to the management, the number of entries being inadequate, although the few that were present afforded some good entertainment and plenty of excitement. Several horses were sent down from Burlington by Charles Perkins, and two days in succession the rider of one of the horses met with serious hurts in being thrown, but proved to be a lad of indomitable courage by coming right back and inviting further disfigurement. It was reported that he had been killed in the last event of the previous day, but this was untrue, and he rode on Thursday afternoon. The accident befalling him in this event being of an unusual kind. He had completed the course that was laid out for him just inside the half mile track, finishing with a water jump, in front of the grandstand, which he took in good form. Just after landing the water jump, the horse bolted across the show ring proper, striking one of the guy wires holding the poles on which the electric lights were strung. This threw the horse in a heap, steed and rider rolling over two or three times, with the unfortunate lad falling under the horse most of the time.

The other hunters and jumpers were owned by William Daniel, of Chicago, these being shown by Miss Hazel Richie, Helgar Rasmussen, who had the well known old-timer, Alston, and William C. Seipp. Mrs. Rasmussen rode in the hunters class and showed her husband's horse to splendid advantage. In the ladies' harness class, Mrs. H. B. Kinnard, of Des Moines, drove the John R. Thompson pair, Ebony Girl and Lovely Lady, and gave a splendid exhibition, winning the first over two of Mooers' entries and Mrs. A. L. Champlain. Mrs. Kinnard was formerly Miss Valeria Young, of Kentucky, and was accounted one of the most proficient horsewomen of the Blue Grass state.

Inaugurating a new plan, the show at the Iowa State Fair began in the last half of the week of August. The first show rings were called on Saturday, some of the breeding classes and the heavy horse department having been started on Friday. The probable reason for this was to bring the show to a close in the next week at a time that would enable exhibitors to ship to various succeeding fairs in time to reach them by Monday of the succeeding week, and make allowances for delays in transit. In one way this accidentally worked an unexpected disadvantage to some of the exhibitors as the classes for Saturday afternoon included those for five gaited saddle stallions. A number of the prominent stables, including those of Miss Loula Long, of Kansas City; Blades and Holman, of Holliday; Ed. Moores, of Columbia, and one or two others, did not arrive until Sunday. These stables had been at Shelbina, where they showed on Wednesday and Thursday, and from which place they had expected to ship out on Thursday evening, which would have put them in Des Moines in time for the Saturday afternoon show. Unfortunately, a terrific rain and wind storm came up Thursday afternoon about the time the horses were being loaded and made it impossible for the exhibitors to get out that night. Consequently, they did not arrive in Des Moines until Sunday, and, as stated, the saddle stallion classes were scheduled for Saturday afternoon.

The first class called was that for saddle stallions showing five gaits, four-year-olds and over. Four very good stallions were brought forward and Hamilton Bros., of Keota, Iowa, won first, and second went to Art Bonta 2267, a very handsome ten-year-old bay horse, sired by Elliston 667; dam, Lady Artist 183, by Artist 75; and was ridden by Don Reavis, and showed a very apt proficiency at all five gaits. Ralph Hamilton rode Fitz Boy, a chestnut horse, with star, snip and hind ankles white, four years old, and was bred by Ed. Hodgson, of El Paso, Ill. Third premium went to Montgomery 2787, a handsome bay horse that is now owned by C. E. Monahan, of Des Moines, being now eight years old. This horse has a rather interesting history, having been bred by Allen S. Edelen at Burgin, Kentucky, who sold him, if my memory serves, to a Mr. Clifford, of Denver, Colo., when he was about three years old. Mr. Clifford was identified with some horse affairs and horse shows in Denver, and was also in the newspaper business. At a later date the horse was in the possession of his wife, who either sold or traded him during one of the Denver horse shows to O. J. Mooers, of Columbia, Mo., and probably passed from Mr. Mooers' possession to Monahan within the last few years. He is a very fine, upstanding bay, of beautiful color, and is sired by Montgomery Chief, out of Edelen's well known brood mare, Glenworth Maid, a daughter of Chesterfield, and tracing on further back to King Eagle 750 and King William 67. He probably never had the advantage of real first-class training, but looks as though he was a horse that, with proper training, would be very formidable in high society, in both gaited saddle and harness classes. Mr. Monahan is a middle-aged gentleman and made a very creditable showing with the horse, getting third in this class and second in another class later on in the afternoon.

Saddle stallions three years old and under four brought out only one entry on account of the non-appearance of the stables mentioned above. The one shown was a very handsome chestnut called Kentucky's Champ Clark, sired by Bourbon Star, a well known and frequent winner owned by Charlie Cohen, of Lexington, the dam of this horse being Mollie T. He is owned by Bruce Robinson, of Riverside, Iowa, who showed him to very good advantage. Stallions any age were given a peculiar classification at Des Moines, being shown under the walk, trot and canter division, a class that, so far as I know, is not given in any other premium list. Whether this is an error in the arrangement of the catalog, or intended for some purpose, I am unable to state, but I know the saddle stallions are not supposed to show in a three-gaited class as a separate classification, and walk, trot and canter classes do not usually include stallions. The class was won by Art Bonta, the second going to Montgomery, third to Fitz Boy, fourth to Kentucky's Champ Clark and fifth to Artis Mont Rose, owned by Fred Williams of Barnes City, Iowa. It is noted that in the five gaited division the aged stallion class is classified as stallions four years old and over, three gaited division, containing mare or gelding any age, stallion any age, and mare or gelding ridden by a lady.

On Monday afternoon the first class was for five gaited mare or gelding over three and under four and brought out one of the best contests of the entire fair. There were five premiums and six horses. The winner was the brilliant bay filly, My Idol, sired by Lord Highland, out of the famous old three gaited chestnut, Lady McDonald, by Rex McDonald. She was bred by James L. Gay & Son, of Pisgah, Ky., and was one of the winners in the First National Saddle Show Futurity at Lexington. Later was sold to Wallace Estill, of Estill, Mo., in whose ownership last year she was one of the season's leading winners, and at the Estill dispersal sale passed into the present ownership. She was ridden by W. Del Holman, and is a filly of wonderful future promise, as well as present ability. She is quite certain to be very formidable in the three gaited division later on, and I do not hesitate to predict championship honors for her as a walk, trot and canter mare. She is of exquisite finish and brilliant carriage, characteristic of the Highland Denmarks, and the animation and vivacity of the Rex McDonalds. Her contender in this class was also an extremely good filly called Polly Ann, owned by James Houchin and showed for all she was worth by L. B. Barnett. This was formerly known as Heaven's Maid, or some such name suggestive of her sire, which is Astral King. She has been a leading winner all through this season and has been defeated only once or twice, has much of the air and grace as well as speed and action of her sire, and is a coming five gaited mare. The third ribbon was awarded to Varnon Castle from the stable of Blades & Holman, and ridden by Lon Blades. Is sired by the good Missouri stallion, Rex Chief A, and, while not as far forward in condition and education as the others, was picked by many of the ringside critics as certain, with age, to be placed ahead of those who beat her here, on many occasions. Is extremely fine in the head and neck, and a horse of very great prospect. Ed. Moore had the fourth prize winning with the light chestnut filly, Eloise Thornton. This filly will be recalled as the winner of the first Saddle Horse Futurity in Missouri and also as having been placed in the yearling division of same. She is a large, growthy mare that will improve constantly, and Ed. Moore made a splendid show with her, getting all of the gaits in good form. She will make one of the best aged mares, if she has no bad luck, that will be seen in her class. Fifth premium went to Francis Highlander, a daughter of King Highland, whose dam was Lady Tulleride, owned by B. F. Redman, of Oskaloosa, Iowa.

The class for walk, trot and canter mare or gelding to be ridden by lady, 50 per cent for riding and 50 per cent for horse, was scheduled for Monday evening, but on account of the terrific storm, which put the entire grounds in darkness, by wrecking the electric light system, and swamping everything, blowing the tent in which some of the stables were housed, was necessarily thrown over to Tuesday evening and four good entries came out for the four premiums into which this event was divided. Mrs. Halger Rasmussen proved to be the winner, with O. J. Mooers' Princess Charming, Miss Hazel Richie, of Chicago, getting second on William Daniel's Tommy Atkins, Mrs. Shields getting third on Geo. McDonald, owned by Uhrich Bros., and Mrs. Del Holeman fourth on Maxine, owned by Blades & Holeman. On Tuesday afternoon the three gaited class for stallion, mare or gelding, any age, was shown and nine very high class animals gave Judges Dobson and Pepper their hands full. The first premium was awarded to Miss Loula Long's Nancy Garland, shown by John Hook, second to Houchin & Anderson's Pauline Moore, shown by Barnett; third to Mary Dowling, owned by Paul Brown, St. Louis, shown by Holeman; fourth to Princess Charming, owned and shown by O. J. Mooers, and fifth to Montgomery, ridden by Monahan. Miss Richie showed Daniel's Bro. Mack, Viles showed William C. Seipp's Gay Deceiver, Ed. Uhrich showed his Geo. McDonald, Helgar Rasmussen showed O. J. Mooers' Gracie Gray. Considered from every point, it must be considered to be one of the best three gaited classes that will be seen anywhere this year.

The five gaited class for three-year-old mares and geldings owned in Iowa was won by Major, which was shown by Don Reavis, of the Hamilton stable, this horse being shown by C. N. Arnett. He is a son of Rex McDonald, and as splendid a trot and as good a rack as any of the horses shown in any of the classes. Raven H., from the Hamilton stable, was second; third, Francis Highlander; fourth, Thomas A., ridden by Del Holeman, for the Hamiltons. On Tuesday afternoon also was shown the five gaited class, and eight entries came before Judge Porter Taylor and was as good a class as will be seen anywhere. At the head of the string was placed Paul Brown's gelding, Johnny Jones, which was shown by Del Holeman, and he fought a real battle for the first honors, with four other winners, as well as three that were unplaced. John Hook was showing Maurine Fisher and made an awful fight to not let the blue ribbon get away. Trev Anderson also made a strong bid with Houchin's chestnut mare, Helen Hicklin and he certainly showed this mare with splendid form, and got every particle of doing from her of which she was capable. Lonnie Haydon made a strong effort with Miss Long's black mare, Czarmiva, and at the rack had the edge of all the entries. Splint Barnett came fifth with the famous gray gelding, Nickle Plate, which did not make as good a show in the soft footing of this tan bark as he usually does on the outdoor, hard track. The ones not placed were Ed Moore, with the excellent gelding, Diamond McDonald; Mooers, on the black gelding, Lawrence Barrett, that used to be King Hamilton, and Ed. Uhrich, on Geo. McDonald.

Naturally the big event, from the show horse point of view, was the $1,000 stake for five gaited saddle stallion, mare or gelding, this being the first time a stake of this kind has ever been offered in Iowa, and it was conceded to be more really experimental on the part of the management, which in conjunction at each of them for the purpose of provoking a wider degree of interest in the breeding of saddle horses in their respective localities, and to furnish entertainment that may be talked about for a long time to come, and probably with some minor consideration to the effectiveness of such events as drawing cards affecting attendance. That the stake at Des Moines was a brilliant success and one which enthralled thousands of spectators, is putting it very mildly, and certainly American horse breeders' interests owe a debt of gratitude to the management of the Iowa fair for affording them an opportunity to display their animals before so large and important an assemblage of people. Fourteen entries had originally been named and twelve of these appeared for the word. As the event is now history, the names of the contestants and their riders are given in the order in which the awards were made. Astral King was the winner, ridden by L. B. Barnett, and Kentucky's Best, ridden by John Hook, was second; Johnny Jones, with Del Holeman up, was third; Maurine Fisher, with Lonnie Haydon riding, was fourth; Miss Cliff, with Barrett Moore, was fifth; Ed. Moore and Majestic McDonald, was sixth; Art Bonta, ridden by Don Reavis, was seventh, and Lawrence Barrett, ridden by O. J. Jones, was eighth. The horses unplaced being Kentucky Champ Clark, ridden by Bruce Robinson, it being remembered that he is a three-year-old, and Geo. McDonald, ridden by Ed. Uhrich; Mary Dowling, owned by Paul Brown and ridden by Lon Blades, and Montgomery, ridden by C. E. Monahan, of Des Moines. The horses entered that were not shown were Cason McDonald and My Major Dare. The horses were delayed at the post quite a little while after being called on account of the track being utilized by Lincoln Beachey and his airship, after which they paraded down the stretch in front of the grandstand, and were announced to the audience, the show being held in the ring opposite the amphitheater. It was judged by Porter Taylor and about three-quarters of an hour was consumed in arriving at the decision. The contestants were really in pairs, first and second horses clearly out-showing the next set, and Astral King, the winner, by considerable margin, over Kentucky's Best. Johnnie Jones, Maurine Fisher and Miss Cliff had an interesting triangular contest for the third money, it being decided to rank those horses in the order given. Ed. Moore, with his regularly beautiful bay, Majestic McDonald, would probably have been placed much higher had the horse made a better performance of the different gaits and had not made so many mistakes and given an exhibition of bad manners, and unfinished show ring education. It was a beautiful sight, every horse was given a full, fair and impartial trial, and when the ribbons were awarded probably there was not a dissatisfied voice as to the placing of any one of them. The triumph was clearly Astral King and Barnett showed the horse with masterly skill and won a deserved victory.

On the other hand, no stigma of disgrace attaches to the losing of first place for Kentucky's Best and he had to yield the pride of place simply to an older and more seasoned, and more brilliant performer. Hook showed him with all the skill of generalship of which he is a pastmaster, and there were undoubtedly moments when the beautiful black appeared to be threatening his chestnut rival dangerously. But in the final summing up the consensus of opinion was unanimous for Astral King and he was entitled to wear the blue ribbon.

TWENTIETH CENTURY FARMER, OMAHA, NEB.

The Iowa State fair has again scored a record-breaking exhibition and display of all that contributes toward making a great agricultural and live stock show. Iowa is distinctly at the top in state fair and live stock exhibitions. Its resources within itself are a factor that cannot be easily overcome by any division of the United States. Iowa is great in its herds of pure-bred horses, cattle and hogs. It is not only great in numbers, but it has immense capital employed in the operation of producing the best that human ingenuity, skill and breeding intelligence can suggest.

Iowa's State fair has become a national exhibition, where large numbers of the high class show animals of America congregate Owners of the champions and grand champions of the live stock shows of the country believe that nowhere can they be afforded greater honors than in occupying a place in the show ring of the Iowa State fair.

It is not in any spirit of placing one of our great live stock shows above another that we say that noted expert authorities on live stock and live stock shows have gone on record as pronouncing this the greatest live stock show in horses and cattle that has ever been held in the United States. When this has been established the way is clear to make it world-wide, since the International at Chicago has been freely pronounced by the best of expert judges of Europe to surpass any held in that far-famed land of pure-breds.

INCREASE IN LIVE STOCK EXHIBITS.

This was not a two-breed exhibition of live stock. All breeds of every kind of stock—horses, cattle, hogs and sheep—were fully represented, and the very closest competition prevailed throughout the classifications in each show. The comparison with last year shows a remarkable increase, which indicates the position this fair holds in the estimation of exhibitors. In 1913 there were shown 993 horses, this year 1,142; cattle in 1913, 945; this year, 1,188; hogs in 1913, 1,000; this year, 2,500 ;sheep in 1913, 750; this year, 800. These figures indicate the growing popularity of the Iowa State fair among the high class outside breeders, who are anxious to get into the tide of exhibition excellence.

Iowa is fortunate in having the natural layout in ground suitable for every feature of exhibition. It has been taken up by competent engineering talent and planned into a most beautiful and fitting design for all departments. The classification or division of exhibits has made it an easy matter for the fair visitor to find anything he desires to see with the shortest possible expense of time. It is a fair grounds planned and builded upon a business basis, yet with natural fitness that charms the visitor with its beauty.

The machinery display was a very large increase over former years and exceeded the prepared exhibition space by more than twenty acres of out-of-door room. In the thousands of machines on display it was asserted that there was not a single one but had some improvement over last year. This department was thronged with visitors and buyers, and the machinery dealer has good prospects for a big trade for next season.

The agricultural and horticultural divisions at this fair are strong features. They are not planned solely for show and magnitude of exhibit, but based upon the educational advantage that these exhibits may contribute to the visitor who is seeking information. The county and farm displays are under supervision of the county agent, who in this case is J. W. Coverdale, state agent of the work in the state of Iowa, an appointee of the federal Department of Agriculture. No exhibit can go into these displays that does not in all respects conform to the published requirements laid down by the superintendent.

All articles of farm production must be accompanied by a full description of how they were produced, when planted, kind of soil grown in, preparation of the ground, cultivation, etc., so that with each article any visitor at the fair may inspect and study a full account of its production, thus making the farm products show in reality an educational study and a benefit to the student of crop work or seeker for information.

It has been established that merely a feast for the eye is not a consolation to the soul; that the fair exhibit, if it is to serve its best purpose, must teach the lessons of advantage by information to be given out to those who are interested inquirers. Blank forms are provided for the grower or producer to fill in, showing every feature of work in production. These are ready with the exhibit for inspection at all times. Large premiums are offered for these displays, based upon a pro rata division, according to the score of the exhibit. This promises to be a successful method of exhibition and is meeting with great favor by agricultural experts from all parts of the country.

The fruit show was, in all respects, the best ever put up in the state. Apples, pears, peaches, plums and grapes were of excellent quality. Unfortunately, however, the fruit crop of Iowa is very short, due to a failure in blooming which has not been satisfactorily accounted for. Insect damage has also been a contributing factor in lowering the yield.

WOMEN AND CHILDREN'S BUILDING.

No finer accommodations for women and children are provided anywhere than the new building at the Iowa fair. Cool, airy, quiet rest rooms; clean, sanitary arrangements, splendid playgrounds and nursery for the little ones, where they are much better cared for than being dragged about among the exhibits; model rural school room, excellent art exhibit, quarters for the traveling library commission, health exhibit, occupying much floor and wall space. These are only some of the departments housed in this beautiful building.

The health exhibit is one of the seven belonging to the State university and constantly in use throughout the state. It presents warnings against flies, patent medicines and insanitary practices in a clear, comprehensive manner. One of the most striking things in this department is the bell that tolls every two and one-half minutes, each toll representing one death from tuberculosis, most of these deaths being preventable. The graphic manner in which the process of securing testimonials by fraudulent patent medicine concerns is pictured in another impressive feature of this exhibit.

The baby health contest is housed in ideal quarters in the Women's building. The interested audiences are accommodated in the auditorium, from which they view the examinations going on in the glass-walled room, where the babies are undisturbed by the outside noises, which are deadened by the walls. The light is good, the ventilation cared for, arrangements being made by which the air is kept pure, but no drafts are admitted. There is even a fireplace, which was of service in keeping the temperature right during some of the cool days of the week. Mrs. Mary T. Watts, with her corps of assistants, managed the baby contest with a smoothness acquired by a number of years' experience and facilitated by the spacious and well arranged quarters prepared for this important department.

SWINE DEPARTMENT.

In numbers the hog show was not up to the average, although more hogs were in the pens than last year. At least two factors were in a measure responsible for the decrease in the usual attendance. All hogs shown at this fair are required to be vaccinated. Some breeders won't vaccinate, consequently cannot show. In many places cholera last fall and winter was very prevalent and without doubt many showmen did not have the pigs to show on this account.

POLAND CHINA HOGS.

The Poland China show was, in at least one respect, different from all previous Iowa state fairs. It was a big type show. The hot blood was not there. The ribbons were tied by C. A. Marker, of Tolona, Ill., who gave good general satisfaction.

The aged boars in this division were certainly very attractive. It never before has been our privilege to see such size and quality. They were big, still smooth, with fine backs and with practically perfect feet. The Fred Seivers hog, Smooth Big Bone, was placed first. This hog had plenty of quality, was smooth and had a fine masculine appearance. Extra Long, owned by C. W. Crees, of Coon Rapids, Iowa, won the red ribbon. This hog was deep, long and smooth, with fine finish. D. C. Lonergan, of Florence, Neb., drove out the third prize boar in this class, showing Big Ursus by Big Mischief, dam by Big Victor. The Lonergan entry, like the other two, was massive, deep and strong. Many hog men have been saying they wanted size with quality, which we believe very essential. These qualities were certainly brought out in this class.

The first prize senior yearling, shown by Shivers & Son, Knoxville, Iowa, and the best junior yearling, owned by W. E. Willey, of Steele City, Neb., were both animals of superior merit. In the final test the Shivers boar was made grand champion.

In all the Poland China sow classes good animals were driven out, the grand champion ribbon going to D. C. Lonergan, of Florence, Neb., on his great junior yearling entry, Big Type Girl.

This show has demonstrated the fact that a hog carrying scale and quality can be produced. The Poland China men have been working along this line and are meeting with good success.

DUROC JERSEY HOGS.

There were something over 600 animals in the Duroc Jersey show. Generally speaking, we do not think the quality shown in the class was up to the standard. Barring the under six months pig class, the first prize winners were good individuals and would make a creditable show in any ring. We looked this show over carefully and wondered why the show generally was not up to the standard. Duroc breeders must awaken to the fact that they must maintain the necessary qualities of good feet and good backs if they expect to keep their favorite breed in the position it is at the present and has been for some time past. Many animals in this class show good size, but are seriously lacking in these two essentials.

Ribbons in this were tied by A. J. Lovejoy, of Roscoe, Ill. Generally speaking his decisions were favorably received. In some cases he had a hard job, as is usually the case in these large shows. In some of the pig classes Mr. Lovejoy made serious objections to some animals shown. Some questions asked the showmen in this class could not help but convey the idea that the judge thought the ages were not as represented. In this connection we wish to call attention to this matter to showmen of all breeds. We have often seen pigs driven out in the under year and under six months classes that appear to the experienced man to be out of their class. This is something that doesn't pay.

Waltemeyer Bros., of Melbourne, Iowa, were winners of the blue ribbon in the aged boar class on their boar Grand Model. This boar was of true Duroc type, having the splendid back, and was of good length, smooth and mellow. Second prize went to John Thompson of Lake City, Iowa, on his three-year-old boar. This boar showed splendid finish and depth and considering the fact that he was a strong competitor in this class last year, he made a very creditable showing. Waltemeyer, of Melbourne, won in the senior yearling class over I. E. Stieckelman, of Clarinda, Stieckelman's boar lacking in length, action and scale of coming up to the Waltemeyer entry.

W. H. and A. D. Vandmeter, of Williamsville, Ill., were successful in getting the blue ribbon on their junior yearling. Waltemeyer won first on their good brood sow, Golden Queen 35th. This sow was sired by Golden Model 2d, dam by High Model. Later in the show this sow was made grand champion by a popular decision. Waltemeyer Bros. were winners of both junior and senior champion boars, grand champion going to Grand Model.

CHESTER WHITE HOGS.

The Chester White show was considerably larger in numbers than in some years past. Many creditable animals were driven into the ring, showing a material advancement in quality in this breed of hogs over what they were several years ago. We demand one thing, and that is in looking at any hog we always want to see a good foot and a good back. We do not think that the Chester White breed in general is up to the high standard of some other breeds in these two important respects. Chester White breeders in their breeding operations should pay more attention to good feet and good backs and more size of bone. They have an animal with good feeding qualities and very prolific.

The first prize aged boar, shown by W. T. Barr, won senior and grand champion. In the sow class Raymond E. Brown, of Dunlap, Iowa, was winner in the aged class; R. F. Fantz won in the senior yearlings, W. T. Barr in the junior yearlings and M. F. Black, of Scribner, Neb., in the under year. The Black sow was made senior and grand champion. The making of this sow grand champion was by a popular decision, although it is considerably out of the ordinary, for an under year sow is seldom winner of the purple ribbon. Mr. Black showed but four pigs, a boar and three sows under year. This was a litter of exceptional quality, winning first on the boar and three sows under year, open, bred by exhibitor.

HAMPSHIRE HOGS.

The Hampshires were out in force and made a very creditable showing. Wilson Rowe tied the ribbons in his usual efficient manner. The aged boar winner was Charles E. Bunn. This boar was afterward made grand champion of the show. The purple ribbon on this class was awarded to Roy E. Fischer, of Winside, Neb. Noticeable improvement is being made each year by breeders of this breed of hogs. The shortening of the pastern and a general strengthening of the feet as they begin to obtain a little more size and larger bone under these animals will be a material improvement.

BERKSHIRES AND YORKSHIRES.

N. H. Gentry, of Sedalia, Mo., tied the ribbons in the Berkshire class. The Sutton farm was winner in the aged boar class, afterward being awarded the purple ribbon on this animal. The Iowana farm were strong competitors in all classes. Berkshires are one of our earliest breeds; at the same time they have not, in our opinion, made the advancement they should in having good feet and short pasterns. Also, in addition to size of bone, the general run of animals in this breed would materially waste their selling qualities to the average corn belt farmer.

Three herds of Yorkshires were entered, as were some Tamworths. These two breeds are always light shows at the Iowa state fair, the average farmer in this part of the country preferring to raise more of the lard breeds in preference to the bacon type, due to the fact that corn is the main feed on which they have to depend and corn is not a good feed on which to raise bacon animals.

CATTLE DEPARTMENT.

That Iowa will come to the rescue and supply the beef needed by the warring nations can be but little disputed if one may judge by the magnitude of the exhibit of pure-bred cattle at Des Moines. It was without any question superior to any previous display seen there, and many who have followed show circuits for years counted it a record-breaker for the territory west of the Mississippi. The scarcity of cattle at the large markets of the country has awakened the small farmer to the realization that he must begin to produce calves which are to consume surplus grain and roughage. The breeder of registered beef cattle is aware of this and he is coming forward to the big shows with the idea of attracting the fair visitors' attention to sale stock. Fortunately, the week was quite cool and the heavily laden show beasts seemed to come through in nice shape. No deaths at the fair grounds were reported, although one of the Angus exhibitors lost a two-year-old bull in transit, for which he had paid $2,005 last winter.

Beef cattle must be fitted to make a creditable showing, yet breeders would prefer to keep their animals in moderate flesh. Perhaps this may be possible at some time in the future. When one goes to the shows and sees beef cows weighing upwards of a ton in show shape, with their calves at foot, weighing possibly forty or fifty pounds when several weeks old, he cannot help but wonder if the high-fitting has not proven detrimental. Several years ago the Hereford people endeavored to pass a rule prohibiting the exhibition of cows over four years old. This would doubtless aid the producing record of many showyard heifers.

SHORTHORNS.

Leslie Smith, of Minnesota, a breeder, herdsman and showman of many years' experience, tackled the difficult task of ribbon awarding in this breed. There was a total of 258 head, representing thirty-one different herds. Last year there were nineteen exhibitors with a total of 160 entries. Consequently, the show was larger this year by 50 per cent than last year. There were ten aged bulls. While the top was good, there were several individuals at the tail end of the string which were scarcely of county fair caliber. Reece, of Nebraska, headed the list with Whitehall Rosedale. This bull is perhaps the largest show bull of the breed in America today. He weighs 2,675 pounds and carries his fleshing quite evenly for an animal of such scale. He is typical of the English type and his scale would prove of much benefit to him in a British show ring. He was later made senior champion. Harding's Village Denmark was rated second. He is a bull of some 2,300 pounds and showed rather gaunt in the ring. This condition caused him to look a trifle rough. Some judges would disagree on the placing of this pair. At St. Joe, the week before, the Harding bull was placed above the Reece bull.

In the senior yearlings Saunders, of Iowa, headed the list with his sensational 1913 calf, Cumberland's Type. This youngster weighed 1,300 pounds at Des Moines in 1913 when but a trifle over 11 months old. In January at the Denver show he weighed 1,500 and now he registers an even 1,800. For a calf of his size and bone he carries above the average quality. His skin is still pliable and mellow, while his covering of flesh is smooth and thick, although it might possibly be a bit firmer. He was later made junior and grand champion.

The senior bull calves formed a sight worth seeing. Had they been put up at public auction after the show the entire lot could easily have made a $500 average and still sold in a conservative manner. The bull Uppermill Lord was a growthy calf of good width and in the pink of condition. He looked well at the head. Miller, of Missouri, came second with Choice Cumberland, a dark roan shown thin. He looked a trifle narrow from either end, but put up a great appearance from the side.

There were an even twenty in the junior calves, headed again by one from the Uppermill farm, with Anoka farms of Wisconsin an easy second on Augusta Sultan.

Female classes were scarcely so strong as the males. The aged cow, Mildred of Oakland, a 4-year-old of show yard fame as a calf and yearling, was selected to wear the blue. In the 2-year-olds Harding headed the list, with Lancaster Duchess 7th. She is showing in the highest bloom and was later placed as senior and grand champion. Of the fourteen senior yearlings Kilgour's Proud Rose was chosen over Burge's Silver Mysie. There were twenty junior yearlings, headed by Kilgoure's Fair Acres Nell. This heifer was later given the junior honors. From a big class of senior calves Saunders' representatives were chosen for first and second. This was perhaps as closely contested as any of the female groups. Twenty-three junior calves were headed by Herr Bros.' Cumberland Lass, a dark heifer of ample scale, beautiful lines and a thick, even covering of flesh. Second to her stood Trueby Allen from the Nebraska herd of Rapp Bros. She was good enough to head her class at St. Joe and would not have looked out of place at the head here, the judge admitting them to be a very close pair.

HEREFORDS.

Although there were 199 Herefords as against 168 in 1913, there was not the outstanding show of this breed such as was made by the Shorthorns. Herefords seem to be content with making their big splurge at the Kansas City Royal. While the Des Moines rings were reasonably large and the quality at the top end of each class was exceedingly good, yet the show was only a trifle above what it has been in other years. Phil Lee of Texas did the awarding, and although several former decisions were reversed, he gave very good satisfaction and held consistently to his smooth, wide-backed type, with ample scale and ruggedness. In the aged bulls Harris' Prince Perfection by Perfection went to the top, with Curtis' Don Perfect second. Imported Farmer, a bull that won the blue consistently last year as a 2-year-old, was left in fifth place. In the 2-year-old class appeared one of the best Hereford bulls in the country at this time. This is Repeater 7th by Repeater and owned by Harris of Missouri. He is growthy, of true type, deep flank, heavy quarters, and covering all is a deep, firm layer of meat. There is scarcely an uneven spot anywhere on this bull's back. He was later made senior and grand champion. Tow of Iowa won with Disturber Jr. in the junior yearling class and later received the junior championship on him. The Davis herd of Mississippi won consistently in the younger classes. Honors were quite well divided between Harris, Curtice, McCray and Tow.

Among the females were some very praiseworthy individuals. McCray won in the aged class on Nora Fairfax, while Harris caught the red on Defender's Lassie 2d. In the 2-year-olds the judge found his senior and grand champion, Miss Repeater, by the same sire, as the grand champion bull. Tow won the junior championship on Disturber's Lassie 2d, a very smooth senior calf, possessed of much Hereford character and refinement.

ABERDEEN ANGUS.

There was a somewhat smaller show of the black doddies than in 1913. About 100 head of high class individuals formed the exhibit. Several prominent breeders failed to bring out their show herds. With the exception of the Caldwell herd from Missouri it was purely an Iowa show. The McHenry string, as usual, made a very strong showing.

GALLOWAYS AND POLLED DURHAMS.

Charles Escher of Iowa pinned the ribbons on these two breeds. Classes were small, there being small displays of each. Quality was good in most cases. Some of the Polled Durhams were shown without fitting and hence were handicapped in the ring.

RED POLLED.

There were five herds of this dual purpose breed. Elliott Davis of Lincoln, Neb., made allotments in a careful and acceptable manner. The 2-year-old Larabee bull, Teddy's Charmer by Teddy's Best of the Hanssler herd, looked worthy of the purple. Many breeders consider him one of the best young prospects in the country at the present time. Hill of South Dakota won in the senior bull calves with Martin, a deep-bodied youngster of much promise. A splendid group of aged cows was led before the judge. They looked like dual purpose for fair, with large well-placed udders with tortuous veins leading forward to the expansive milk wells so characteristic of the breed. They were cows with wide backs, and doubtless their calves in the fattening pen would produce profitable beef.

DAIRY CATTLE.

That dairying is a valuable adjunct to the farmer of the middle west was well exemplified at the Des Moines show. Farmers from every corner of the state stood by and watched carefully as the dairy cattle were being placed. Breeders reported much inquiry for young stock throughout the week. Many who have of recent years made a success of dairying have received their first impetus to enter the business from seeing the stock of the various breeds at the state fair. Guernseys seem to be the popular cow in many regions. There were more of these at Des Moines than of any of the dairy breeds. Some 125 head were led before the judge, George P. Grout of Minnesota. Marsh of Iowa made a great showing and caught most of the blues and purples. His imported bull, Hayes Cherub 2d, an undefeated champion of 1913, was again awarded grand championship honors. Several exhibitors were there with herds from Wisconsin, while the balance were Iowans.

The Holsteins made an average show. W. J. Gillett of Wisconsin pinned the ribbons. The Genoa Indian school of Nebraska made several important winnings. Iowana Farms of Iowa captured the bulk of the big awards. Holsteins are undergoing a boom at this time and there seems to be a scarcely sufficient number of them to meet the demand from the western districts embarking in better milk stock.

Jerseys were judged by Hugh Van Pelt, as were the Brown Swiss. These two breeds were present in about equal numbers. Specimens of each breed when seen near each other certainly form a contrast. Although of about the same color, they are extremes otherwise. The Jerseys possess the fine bone and skin, meek little head and light horn of much quality, whereas the Swiss are of extremely heavy bone and big joints. The head is coarse and the horn large. They should prove of value in western districts where severities and hardships are quite frequent. The Jerseys were an even lot at Des Moines. Most of them were of the finer, so-called "Island" type. The judge picked for the qualified individual of strong milking indications. The champion cow was an extreme of the milking type. She carried no surplus fat at any point of her body. Her large udder and winding veins would prove her to be a milk factory of high development.

HORSE DEPARTMENT.

All previous records as to number of horses were broken. Prophets had predicted a light show because of the absence of the importers as well as a general depression in the horse values during the last year. As proof that the small breeder was very much in evidence we noted that there were 171 exhibitors with horses in the barns. This was certainly commendable.

Superintendent Curtiss inaugurated a new plan of judging this year. A small program was printed giving the day and the hour that each class would be judged. In this way all interested knew exactly when each class would be in the ring.

Some of the larger classes took more time than was allotted them. However, by working until 1 o'clock each day the judges were able to get through the scheduled classes. The plan is certainly praiseworthy, as many of the visitors desire to see certain parts of the judging, but cannot afford to give all their time to this feature. By the aid of the detailed program they can plan their route in advance and thereby see all they wish to.

The judging, for the most part, was quite satisfactory. The one-judge plan was used entirely in the open classes. This method doubtless saves considerable time, although with two judges officiating serious mistakes should be out of the question. Judging horses of any kind is complicated work, to say the least. With the wide difference of opinion that exists as regards type it is hard for a judge to satisfy all the exhibitors and onlookers, even though he do consistent work.

PERCHERONS.

The French drafts made a highly creditable showing, in spite of the fact that imported horses were practically neglible owing to the outbreak of the war just as the large importers were ready to assemble their purchases ready for shipment. Iowa breeders should profit by the present condition of affairs. Evidently they are expecting to for they certainly had their colts out in large numbers at Des Moines. The American breeds made a highly creditable showing besides what few imported horses were on hand and were able to win consistently. This is surely proof that drafters can be developed in the United States to as great a degree as they are abroad if we will but feed and care for them.

The Percheron judge, Ralph Drennan of Canada, was taken sick Saturday evening after judging the mare classes and Alexander Galbraith was chosen to complete the awarding in stallion and group classes. Several placements were made in the mare classes with which the ringside failed to agree. In the aged class Early's 2,200 pound gray, Hermine, justly headed the string of eleven matrons. She moved well and stood on clean limbs with considerable bone and quality. She was later made champion.

In the brood mare and foal class there were fifteen entries headed by Brown and Walker's black mare, Gargonille and foal by Helix. In 3-year-olds, Early also won, this time on the black Florence 2d. Dunham's gray Lurette was placed second. She is a mare that, as a 2-year-old won championship honors consistently. Corsa won first and second in the 2-year-olds on Caroress and Migon, while his winning gray filly of the 1913 circuit was sent to the barn.

In stallion classes entries were much better than last year. There were seventeen led out in the aged class, against seven in 1913. Champlin & Ruppel of Iowa, won first on the very blocky 2,200 pound horse, Kronprinz. He showed a bit like a Belgian in the head and neck and lacked the true Percheron type of the Dunham colt, Kapon, which stood second. However, his scale and massiveness placed him up. Singmaster won third on Imperial Jalap. This horse won several prizes in France before importation. He was shown thin and looked a trifle cut in the flank, although his underpinning was of the best.

In 3-year-olds Dunham won on the outstanding gray named Lycee. He was later made champion, with the growthy yearling futurity winner of Singmaster as reserve. A black of ample quality, but a shade light below the knees, won second in the 3-year-old class.

There were twenty-six 2-year-olds led out, and they were a good, even string with home-bred colts far in the majority. Truman headed the string with the toppy gray, Mazagram. He showed well at the move and was indeed a likable horse from almost any angle. A trifle more straightness in the hind legs would have improved matters, although he carried ample support below the hock. The Singmaster colt, Malais won the blue, while another gray Truman colt of similar build to the first one was placed third. A colt by Jalap won in the foal class. He was young and looked a trifle leggy. However, he showed an abundance of quality and was of very sturdy build.

BELGIANS.

The draft horse of Belgium is probably stronger today in the United States than in his native land. Importers at Des Moines who were just back from Europe reported the vast German army camped in the heart of the Belgian horse-breeding district and daily slaughtering large numbers of these splendid horses for their food. Probably some day the Belgian government will have to send to the corn belt for horses with which to restock its farms. Be that as it may, there were nearly as many Belgians at the Iowa state fair as there were Percherons. Quality was good, even in the home bred colts and the breed as usual won many friends from the ringside.

In the aged stallions, Crownover won the blue on Farceur, the red roan champion of 1913, as a three-year-old, both at Iowa and the International. He is a horse of 2,300 pounds weight and carried the quality of a Clydesdale. His hocks are the correct pattern and his beautiful cannons and ankles speak well for his endurance. The purple ribbon was justly given him when the champion class was out. There were fifteen led out in the aged class and sixteen in the three-year-olds. The top horse was shown by Champlin of Iowa and is reputed to have been the highest priced colt to leave Belgium this year. Eggert's colt stood second. It was scarcely so clean cut in the head and neck but a trifle shapelier in the body and croup. Onlookers were about equally divided in their choice between this pair.

The mare classes included many animals of show yard records on both sides of the ocean. Lefebure came in strong in these classes and captured both championships. Irvine won in the three-year-olds.

FARMER AND BREEDER, SIOUX CITY, IOWA.

The attendance at the Iowa state fair this year was considerably below normal. For some reason or other the farmers did not turn out so liberally as usual. Stockmen claimed that the percentage of the attendants who came through the barns to examine the live stock was much smaller than it has been in recent years. This may have been due partly to the heavy rains that fell on Monday night, though that rain was by no means general over the state and should not have been a factor of great importance in preventing people at a distance from coming. Early Tuesday morning the weather was still cloudy and probably prevented some from sections close to Des Moines from coming in their automobiles. After Tuesday noon the weather was fine and the attendance should have been large.

It is difficult to say why there was such a lack of interest this year. The attractions and exhibits were certainly all that could be expected and the fair management deserves credit for the way in which they handled this big state institution. It is marvelous to contemplate what progress has been made in the past fifty years in building up this great useful state fair, which is truly an educational institution, the value of which it would be impossible to measure in dollars and cents. From year to year the fair has grown in equipment, in interest, and in value to the people. The state has been liberal in making appropriations for building up this practical farmers' school. Nearly all important buildings are of permanent type and well suited for the purpose for which they were built. They could probably not be improved upon. There is only one thing to regret in connection with this excellent institution and that is the comparatively small attendance of farmers from the remoter parts of the state. When the fair was established it was undoubtedly thought that it would serve all farmers of the state equally well and theoretically it does, but practically only a few scattered farmers here and there from the four corners of the state find themselves in position to attend. There are many farmers in Iowa who have never attended their state fair and always will be. It is not only the cost of getting to the fair that prevents these people from the remoter parts of the state from attending, but many of them are also too busy to be away from home for three or four days at a stretch. It is to be hoped that some way may be found in the near future to make it possible for a greater number of farmers to attend first-class fairs and thus get in closer touch with the big business of farming and stock raising.

It was a pleasure to pass from barn to barn this year and see the large number of cattle, horses, swine, and sheep on exhibition. It was, indeed a pleasure to see the high quality so manifest on every hand. The live stock exhibits at any state fair, and particularly at the Des Moines fair, are a fair index to the live stock activity throughout the state as well as in states adjoining, and this year's exhibition certainly showed that more interest is now being taken in live stock, especially in the breeding of good cattle, than ever before because there were more exhibitors, many of whom were new Iowa breeders. Small herds are being started all over the state because people are beginning to wake up to the fact that there is not only a scarcity of cattle throughout the United States and in foreign countries as well, but also owing to the high price of our land better cattle will from now on become an absolute necessity if stock raising and stock feeding are to remain profitable. Scrub cattle can not be profitably fattened on 70-cent corn and $12 hay, nor can such cattle pay interest on land worth from $150 to $250 an acre. We repeat, therefore, that it was a great pleasure to see that this sentiment was reflected on the fair grounds.

The Iowa State College is becoming a factor of increasing interest and importance on the fair grounds from year to year. Its exhibits are, of course, all educational, but that is not all. They are exceedingly practical and appeal strongly to the more up-to-date farmers. It is true that the college exhibits should be studied with greater care than they are, but they are comparatively new and it takes a long time to get the average farmer to take hold of new things. We trust that in the future these college exhibits will be studied more carefully, for the lessons they teach are invaluable. In one department of the college building there was an exhibit of lime and various commercial fertilizers. The young men in charge explained what kind of soils are in need of lime and how to determine when they are. They showed how a soil may be tested with litmus paper; that an acid soil turns blue litmus paper red, while one that is not acid does not change the color of the paper at all. Tests of that sort were made in the college building and farmers were shown how to discriminate between very acid and slightly acid soils and how much lime to add to overcome various degrees of acidity. Such fertilizers as raw rock phosphate, acid phosphate, kanit, nitrate of soda, and sulphate of ammonia, were shown and their uses explained. The average farmer does not realize that commercial fertilizers have a place in Iowa, yet the time is at hand when the yielding capacity of a considerable amount of Iowa land can be profitably increased by the judicious use of fertilizers in connection with barnyard manure and the plowing under of green crops.

The old story of crop rotation was illustrated by means of charts and records. It was shown that during the past eight years the Iowa State College has had a certain tract of land under a four-year rotation consisting of two years corn, one year oats, and one year clover. During these eight years corn on the rotation fields averaged 73.6 bushels per acre; oats, 68.5, and clover, 2.95 tons. On similar land where corn was grown eight years in succession, the average yield was only 53.9 bushels per acre. Reliable figures show that at present prices of farm products the land under rotation has produced $5 more per acre as an average for the past eight years than that which was not under rotation. Those who have attended the Iowa state fair regularly have seen the soil map of Iowa, which the state college has been exhibiting for a number of years. This same map was on exhibition again this year, and judging from the interest farmers took in this, it still serves a useful purpose. This map shows the different soil areas in the state and the attendants gave information in regard to the general average composition of the soils in the different areas. This map we have always regarded as one of the valuable features of the college exhibit, because it gives a man a comprehensive view of the soils in the entire state.

For some time the Iowa State College has been gathering statistics from tenants with a view of getting an insight into their income. The results of this investigation show that long-term tenants are making considerably more money than short-term tenants. Tenants who have been on the same farms for five years or more have an average annual income of $1,877; those who have been on farms for three to four years in succession, an income of $1,090, and those who have been on farms for one to two years, an income of only $866. These figures are valuable not only to tenants, but also to land owners, and it is to be hoped that many landlords were impressed by them. The reason why we have so many short-term tenants is not the fault of the tenants themselves so much as it is of the land owners. The average land owner will not rent his farm for more than one year at a time and so long as that system prevails our lands will continue to be robbed of their fertility. A tenant can not afford to build up a farm if he has no assurance of remaining on it for more than one year. For the same reason no landlord can afford to rent his farm for one year at a time; we need long-term leases. Not until they become common will any progress be made in building up the fertility of tenant farms. It was also shown that tenants who keep live stock to the extent of 1,000 pounds per four acres of land have an annual income of $1,650, while tenants who kept live stock to the weight of 1,000 pounds per 20 acres had an income of only $485 per year. In other words, the live stock tenants are the men who are making the biggest profits.

The information that could be gathered in the college building with reference to varieties of grains was also very valuable. For a number of years the most promising varieties of winter wheat have been Turkey

Red, Kharkov and Red Cross. In recent years the Iowa Experiment Station has bred a new variety of winter wheat known as No. 404, which seems to be outyielding the varieties referred to above. No. 404 has produced four bushels more per acre than Turkey Red as an average during the past few years. The old stand-bys in the oat line are Kherson and Silver Mine. They head the list of all the varieties that have been under test at the Iowa station for many years, with the single exception of a new variety originated by the Iowa station known as White Kherson. White Kherson has been developed by selecting white kernels from the ordinary yellow Kherson variety, and present indications are that it will be superior to the ordinary Kherson. The best barleys for this state, according to tests made at the state college, are Caucasian, Oderbrucker and Manchuria. Samples of all these varieties, together with others, were on exhibition; they epitomized the practical side of much of the experiment work that the college has been conducting during the past decade.

The poultry industry, as every farmer knows, is one of growing importance. We are just beginning to learn how to produce eggs profitably; the same is also true of fowls for the market. We are learning how to feed them so as to make the largest possible gain from a given amount of feed. The art of caponizing is again being introduced as an aid in producing market poultry at a profit. To that end the state college demonstrated caponizing every day and every hour of the day on the fair grounds. Any farmer could go there and learn to caponize or at least learn the rudiments of it and go home and in a short time become an expert. A capon fattens much more rapidly than a cockerel and his meat brings a higher price on the market because it is more tender, and there is a growing demand for it. In connection with the poultry exhibit, model poultry houses suitable for various farm conditions were shown.

There were a number of individual farm exhibits again this year. All were tastily arranged and nice to look at, but that was about all that could be said for them. As we have repeatedly said in former years, these individual farm or county exhibits are absolutely valueless from an educational standpoint; they mean nothing and the sooner we can get rid of exhibits of that kind and put others of educational value in their place the better off we shall be. The mere fact that a farmer is able to select a few dozen wheat, oat or barley plants from his fields, tie them in neat bundles, and hang them up on the wall in an artistic manner gives no idea whatever of how he manages his farm or how he raises that grain. If individual farm exhibits could be made to show how successful farmers are managing their farms, how deep they plow their ground, how they sow their different grains, what the cost of operating is, and what the net returns at the end of the year amount to, the information would be educational and of great value. It would afford comparison between different systems of farming. There are successful grain farmers who keep up the fertility of their soils without raising much live stock. There are others who are managing live stock farms very successfully. If the results of such different methods could be shown, individual farm exhibits would prove to be one of the most attractive features at the fair. It is time that some steps were taken in this direction.

Uncle Sam was on the fair grounds this year with an exhibit showing people how his parcel post may be used to good advantage in marketing various farm products. This exhibit was quite interesting and it was stated that there is a movement on foot to increase the weight of parcels that may be carried for short distances. Uncle Sam expects soon to be carrying 100-pound packages and make the parcel post a real practical thing for the farmer.

Housewives took much interest in an exhibit that showed the relative nutritive values of different foods. For instance, it was shown that the following amounts of foods have equivalent nutriment values: One quart of milk, one pound of cheese, 10 eggs, 11 ounces of beef, 6.5 ounces of bread, five ounces of corn meal, five bananas, 9.5 ounces of potatoes, and one head of cabbage. While one can not always substitute a quart of milk for 10 eggs, yet the knowledge of the relative nutritive values of these food products is highly important in the management of the home. A great many people consider milk as a sort of luxury, when as a matter of fact it is far from it; it is an economical food. A quart of milk can be bought for eight cents, whereas 10 eggs perhaps cost 25 cents or more. In these days of high priced food products it is important that the housewife should be posted on relative food values of the articles she uses in the culinary department.

HORSES.

PERCHERONS.

The Percheron show was not so good, taking it as a whole, as we have seen in previous years. Probably there were more Percherons on the ground and the entries were larger, but with a few exceptions there were no outstanding winners in any of the classes. One noticeable feature was the great number of new men having entries of a few horses. It was pretty much an American-bred show, and Harry Early of Liscombe, Iowa, a young breeder, is to be congratulated upon his winnings, as he made his first appearance this year and captured the first prize in the aged mare class, the female grand championship, and the reserve. The champion mare, Hermine, is a massive, gray seven-year-old—one that shows that she has been in the collar as well as raising colts. Reserve mare, Florence 2d, a black three-year-old mare of great promise, was sired by the champion Inscrit. Lakewood Farm took their noted sire, Calypso, to show in "Stallion and his get." This horse is in his 17th year, and yet came back and won in his class. The Percheron futurity classes, in which so much interest is taken, was not so large as in some previous years, but judging from the ringside comment, it was the most even and uniform futurity yet shown. Singmaster & Sons won first in stallions on a big, growthy, rugged colt that shows great substance and bone with a lot of outcome. First and second awards in the filly class was again won by Mr. Corsa on the get of his great show and breeding stallion, Carnot.

BELGIANS.

The show of Belgians was the feature of the horse department of the fair this year. Never before has there been shown at a state fair such a high class finished, breedy lot of Belgians. The aged stallion class was reported by competent judges as being on a par with any class shown at the International, and on down to mare and stallion foals each class was strong and competition keen throughout. Farceur, a great roan four-year-old belonging to Wm. Crownover of Hudson, Iowa, won again in the aged class and was later made grand champion. This horse is without a doubt one of the greatest specimens of the breed that has been shown in recent years and is up to date an undefeated champion. Not only is he a champion himself, but his sire and dam were both winners before him. Chas. Irvine, Ankeny, Iowa, had an excellent display and won his share of the prizes in all classes. Anna du Balcan, an aged chestnut mare from the Lefebure stables, came back a winner again this year in the aged mare class and she was later awarded the championship. She has been a successful winner since a colt and is a great specimen of the breed. The Belgian futurity classes were not so large as the classes of some of the other breeds, but individually they were good and made a nice showing.

SHIRES.

The Shire class was up to the standard of previous years. While perhaps numbers have been larger in the past, the quality was there and some very good classes were shown. Trumans of Bushnell, Ill., won both champion and reserve champion stallion, and McCray won championship in mares on the good aged Colham Surprise. She is an excellent individual and a great show mare as well as a proved breeder. The Shire futurity class was very strong in both stallions and fillies; it was by far the best ever shown at the fair. Truman was successful in winning first in the stallion futurity on Fleetwood Laddie. He is a very typy colt of the Shire that is in demand by the American people. Eleven stallions and thirteen fillies were shown in the futurity, and the competition in both classes was strong from beginning to end.

CLYDESDALES.

The Clydesdale show this year was without question the greatest show the breed has ever made at the Iowa State Fair, and we believe that we are safe in saying the greatest show of Clydesdales ever seen at any state fair. In numbers, it was the largest show ever held, and eminent judges said that, taking everything into consideration, they had never seen a better bunch of Clydes come together. The outstanding feature of this show was the Clydesdale futurity, which was by far the greatest class ever shown of this breed. There were in the stallion class 14 colts and competition for first honors was so strong that it was necessary to call in a third judge to place the winner. First place was given to Hope's Pride, a colt considerably younger than his rival; this colt had so much quality and Clydesdale character that the honor rightfully belonged to him. C. R. and H. S. Barron, Elkton, S. D., made a very creditable exhibition, which shows that the West can raise just as good horses as the East.

CATTLE.

SHORT-HORNS.

The Short-horns led all the other breeds on the grounds this year and the quality was above anything ever seen before at this or any other show in the United States. That seems like a pretty strong statement to make, but competent judges said that they believed it was a better and stronger show than was held at the last International. Leslie Smith of St. Cloud, Minn., a veteran breeder and judge, placed the ribbons in a very satisfactory manner. The aged bull class was very strong. H. Reese & Sons of Pilger, Neb., won on Whitehall Rosedale, that was later made senior champion. The two-year-old class was, as usual, the weak class of the show. It seems strange that there are not more good two-year-old bulls brought out, for each year this class appears to be the weakest. The senior yearling bull class was very strong and was won by Cumberland's Type, a good young bull that was a winner wherever shown last year. The female classes were stronger than usual, especially the young classes, and most of them were very large. Lancaster Duchess 7th, a winner wherever shown last year, came back this year in grand form and won the two-year-old class and later the grand championship honors.

HEREFORDS.

Exhibitors of this breed covered territory reaching from the North to the South and the East to the West; in fact one of the strongest exhibits came from Mississippi. The show as a rule was of high caliber—better than has been shown in recent years. The great show bull, Repeater 7th, now in his two-year-old form and as yet undefeated, was again placed first in his class and later awarded the grand championship. He is pronounced by many to be the greatest young bull shown in recent years.

ABERDEEN-ANGUS.

The Doddies were well represented in quality, but in numbers they were not so strong as the Short-horns and Herefords; in fact they were a little short of previous years. Practically the entire Angus show was made up of Iowa breeders; the only outsider was the Caldwells of Missouri. Prince Felzer was in excellent condition and made a great showing. He was an easy winner in the aged bull class and was later made grand champion of the show. Col. Silas Igo of Indianola officiated as judge and gave entire satisfaction.

HOLSTEINS.

One of the greatest shows of Holstein cattle ever held at the Iowa State Fair was that made this year. Some of the most noted herds in the country were represented, hence competition was strong and the placing of the ribbons most interesting. The heavy winners were C. E. Schroeder, Moorehead, Minn., and the Iowana Farms, Davenport, Iowa. Both firms have as good cattle as can be found in the United States. The Iowana Farms succeeded in winning most of the championships. If this show may be considered a criterion of the popularity of this breed for dairy purposes the Holsteins certainly are in favor.

GUERNSEYS.

The Guernseys made the strongest show the breed has ever made at the Iowa State Fair and was represented by five herds. W. W. Marsh, Waterloo, Iowa, had the largest exhibit and won practically all firsts in the female classes and all the championships.

SWINE.

POLAND-CHINAS.

This breed made the very best and strongest show ever made at Des Moines. A very noticeable feature was the many real good individuals on the grounds, which showed conclusively that the big type of Poland-China with smoothness and quality is in favor. The aged boar class was one of the best classes ever seen in any breed of hogs and found favorable comment from the ringside. Mr. Marker's judging was very satisfactory to all the exhibitors. Fred Sievers of Audubon, Iowa, won first on aged boar and grand championship on Smooth Big Bone, a son of Black Big Bone, weighing over 1,000 pounds. D. C. Lonergan of Florence, Neb., won grand championship on one of his superb sows.

DUROC-JERSEYS.

The Duroc show was a strong one, though the championship prizes all went to one and the same party (Waltemeyer Bros., Melbourne, Iowa).

BERKSHIRES.

There was but little if any difference in the Berkshire show of this year as compared with other years. Some of the classes were possibly a little stronger, but others were also smaller. Iowana Farms of Davenport, were strong winners in most of the classes.

CHESTER WHITES.

Many were surprised at the evident popularity of this breed, judging from the excellent showing made. It was by far the best Chester show ever made at the Iowa State Fair; in fact, there were nearly as many Chesters on exhibition as there were of either the Polands and Durocs.

A NEW AND ATTRACTIVE FAIR FEATURE, THE HORSESHOEING CONTEST AT DES MOINES, IOWA.

BY DR. JACK SEITER, CHICAGO, ILL.

(Issued in Bulletin Form.)

First Prize—Wm. Campbell, Rock Rapids, Iowa.
Second Prize—C. E. Wicklund, Marshalltown, Iowa.
Third Prize—Ben Woolgar, Des Moines, Iowa.
Fourth Prize—Wm. Cameron, Ames, Iowa.
Fifth Prize—Wm. Montis, Des Moines, Iowa.

In order to promote more skillful and intelligent shoeing of draft horses, five prizes were offered for the best shoeing in public competition.

First Prize	Silver medal and	$25.00
Second Prize	Bronze medal and	20.00
Third Prize	Diploma and	15.00
Fourth Prize	Diploma and	10.00
Fifth Prize	Diploma and	5.00

Horses for shoeing will be provided by the state fair management. Forge, fuel, anvil and vise will be provided by the fair. All other materials and tools must be provided by the competitors. Each competitor must remove two old fore shoes from his horse and make and fit two new ones from bar iron, lots having been previously drawn for the order in which they will proceed to work.

The style of shoeing will be the ordinary cart horse shoe, without clips or calks.

Each competitor will be allowed one assistant or striker to help him in forging and to hold the horse.

The maximum time allowed to each competitor for the complete operation will be one and one-half hours, and the judges are asked to allow points for rapidity of execution within that limit.

The following scale of points were used by the judges in making their rewards:

Making shoes	35 points
Fitting shoes	30 points
Driving nails	15 points
General finish	10 points
Time	10 points

The judges made note and observations of the following points which will have a bearing on the decisions rendered:

Work on the anvil, hammering and heating. Limited heating and liberal hammering gives tougher and better wearing shoes. Keeping the fire and handling the shoe in the fire. Cutting gutter (creaser or fuller) so that the nail heads will be straight and firm when driven. Punching nail holes the right size and angle. Paring and leveling of hoof. Fitting the shoe without too much burning. Driving the nails at the proper place in the hoof. Cutting and clinching nails. Finish and neatness without too much rasping.

DR. SEITER'S REVIEW OF CONTEST.

This contest was, I believe, the first of the kind ever held in the United States. There have been numerous horseshoe turning contests, but never before a real horseshoeing contest, where the participants were required to strip an animal, dress the feet, make and apply new shoes.

Being honored with the appointment to officiate as judge of this contest, and never having acted in this capacity before, I really was at sea in regard to the modus operandi of the entire procedure, but after arriving at the "scene of battle" I found that I was not the only "green" hand on the job.

In fact, everyone connected with the undertaking was looking for advice as to the best way to proceed. The rules governing the contest were, so I was told, the same under which such contests were decided in Scotland, so, after reading the rules over carefully, it was decided not to change them, at least not for the present contest. But I believe we could draw up a set of rules for future contests of this character that would be more up to date, more American-like, as it were, and easier to comprehend. I am, and always was, a stickler for originality, and we are far enough advanced in our vocation that we do not have to copy, or run second to any nation in the world in regard to the shoeing of the horse; consequently, it is up to us to draft our own rules and regulations for future contests of this character. I believe the public will endorse what I say in regard to this matter; at least, a large majority of the horseshoers who attended the contest, either as contestants or spectators, were in favor of drawing up a more up to date set of rules to govern future contests by.

Whether this contest was advertised sufficiently or not, I can not say; but the lack of entries made me believe so. But, later on, I discovered that it was not caused by the horseshoers being unaware of the fact that a contest of this kind was to be held in connection with the Iowa State Fair, but more so by the fact that most of the horseshoers had a bad attack of "cold feet," or "stage fright," when it came to appearing or performing before the public. Some of the contestants even got nervous and disappeared after they had paid their entrance fee, acting the same as a green colt when refusing to "face the starter." But after the contest was over and we became acquainted, horseshoers could hear them say: "If I had known just how the thing was going to be pulled off, you bet I would have been in it myself." From these and other remarks I heard, I believe that there will be more contestants next year than the management of the fair will be able to handle, or at least enough to entertain the horse-loving public every afternoon during the entire week.

To say that it was a drawing card would be putting it mildly. The tent in which the contest was held was jammed with people long before the time the contestants were to appear, and long after it was all over, too. In fact, it was one of the best mediums conceivable to bring the horseshoers and the horse-loving public together. And right in this tent I have seen many a horseshoer come out of his hard shell of envy and prejudice and mix up with the rest of the horny handed, large hearted "knights of the anvil." It was the beginning of a reunion of horseshoers whereby they will become better acquainted with each other, and the conditions surrounding them and their work, and if this affair is kept up, year in and year out, there is not the least doubt in my mind but what it will be one of the grandest avenues ever paved for the purpose of bringing the horseshoers of the United States together. It is at such gatherings as this that we learn the true sentiments of the men in regard to their chosen work, the conditions of the trade, causes of success or failure; in fact, they have real heart to heart talks among themselves, talks that we rarely or never hear at our meetings; but here in the open, where men coming from miles away meet and become friendly with each other, they lay aside all troubles and prejudice and unfold themselves as they really are; strong, large hearted, whole souled mechanics.

Now, as to the contest: It was held in a tent, probably sixty by thirty feet large, open on three sides, bleachers being built along one side to seat the spectators. If it had been ten times as large it would have been crowded just the same; as it was, it reminded me a good deal of a crowd at a game of baseball, standing a hundred deep and trying to look over each other's heads in the vain endeavor to see the performance. There were three forges set up in the middle of the tent, equal distances apart, anvils and vises in their places, and fuel handy, and as contestants were obliged to furnish the iron and their own tools, everything was soon ready.

ALL READY—GO!

The first day three men participated. They drew for positions and forges, and were given numbers to correspond with those on the score cards, their names being unknown to the judges. After the fires were started and the men were ready, the horses were led in and tied. They were three yearlings, weighing about twelve hundred each. All had been shod before and were supposed to be gentle and stand reasonably quiet. Now they were asked if they were ready, and, answering in the affirmative, the word was given, the shoes were removed, the feet dressed and measurements taken for the shoes, which were made out of inch by half-inch iron. The forges were of the small, portable variety, better known as riveting forges, and were far too small for this kind of work, but finally the stock was hot and the actual work of turning began. Here, again, the men ran into a snag. The anvils, being new, and being covered with some sort of paint or varnish, to prevent them from becoming rusty, made the face rather slippery when the hot iron was laid upon this varnish, and it was with difficulty that one could hold the stock in place for the helper to strike upon it, or when running the creaser or fuller, and also when punching the holes. This was considerable of a handicap encountered by the contestants of the first day that the men following on the next day did not encounter, and I think that this condition of the anvils caused, to a certain extent, the difference in the time made between the contestants of the first day and that of those of the following day, the time of the first day being 58, 60 and 62 minutes, and the time for the second day being 33 and 44 minutes; but, as the time counted only ten points on the score card, this did not have much bearing on the total score.

In turning the shoes, I could not help but notice the different methods employed by the several contestants in going about their work; and, as this had a direct bearing on the result, it was really surprising to me how some of the men still held to some old style and antiquated method of forming the shoe. One of the rules of the contest read: "that limited heating and liberal hammering gives tougher and better wearing shoes," consequently there was plenty of pounding and noise. This "limited heating and liberal pounding" clause is, according to my way of looking at it, a joke. This may have been the proper caper in olden days, when horseshoe stock was made out of old shoes or old iron welded together, then it was, no doubt, necessary to do considerable pounding and hammering to make the mold firm and tough enough so that it would stand the operation of creasing and punching, without "ripping," but this is not necessary nowadays, with our improved methods of rolling iron, and it is rare indeed to run across a bar of iron that will not stand the process of being made into a horseshoe.

Another thing: In this "limited heating and liberal hammering" stunt, we naturally do most of the hammering along the sides of the shoe, but where the wear is the strongest, around the toe, very little hammering is done. So this is one rule that should be eliminated.

The shoes were to be perfectly plain, no clips or toe or heel calks, but I could not help notice that most of the contestants cut off far too much stock for their shoes; in fact, enough to supply turned up heel calks with, and, of course, after the shoes were turned, this extra stock had to be cut off, and this counted against the contestant also.

After the shoe was turned and the first trip was made to the foot, credit was given for the nearest fit, and also for the least number of times the shoe was tried to the foot before it was ready to be driven on. Each competitor was closely observed as the nails were driven, whether he drove them in line, whether he had to pull any nails, and whether the shoe fitted the foot nice and flush; if any of the wall projected out over the shoe, it counted against the contestant; in fact, close observations were kept of the smallest of details, and it was not the time that counted, but the workmanship, first, last and all the time.

CONTESTANTS THE FIRST DAY.

Ben Woolgar, Des Moines, Iowa; time, sixty-two minutes.
Wm. Cameron, Ames, Iowa; time, fifty-eight minutes.
Wm. Montes, Des Moines, Iowa; time, sixty minutes.

CONTESTANTS THE SECOND DAY.

Wm. Campbell, Rock Rapids, Iowa; time, forty-four minutes.
C. E. Wicklund, Marshalltown, Iowa; time, thirty-three minutes.
NOTE—Winners were not judged by time.

JUDGING THE WORK.

In judging a contest of this character, there are inumerable small details to be kept track of, and it keeps a judge stepping about to keep his eye on the men at work, and as my associate judge, Mr. R. B. Ogilvie, was not a horseshoer, but a breeder and show horse judge, could not stand the heat and smoke (it was an exceedingly hot day in the tent), he did not stay around much the first day and not at all the second, it left the burden of the work upon my shoulders.

Now, for instance, in pulling off the shoes, I had to keep my eye on three men; did they cut the clinches or simply make a "bluff" at it? Was the shoe carefully removed, or was it torn off with one or two jerks, without regard to bruising the sole or tearing the wall? Was the foot dressed properly? Was the toe or heel too high? Was the foot level? Did it set square upon the floor, when bare-footed? Was the shoe long enough? Were the heels fitted to the foot properly? The bearing surface of the wall and the sole had to be taken into consideration.

One contestant, after removing the shoe of a rather flat-footed animal, whose wall had been dressed down far too much, in fact, so much that the sole actually had the appearance of a typical drop sole, was not satisfied to let it go at that, but attempted to rasp some more off of the wall, and then he attempted to pare out the already too thin sole; naturally, this counted against his score; and then, again, when he applied the shoe, he had the most of the pressure on the sole around the toe, instead of on the wall, he having failed to concave out the sole bearing part of the shoe sufficiently to prevent excessive sole pressure.

After the shoeing was finished, the animals were jogged up and down the road several times, note being taken of the way in which they traveled. Did they move free and easy? Did they travel square? Did they set their feet down flat and even? Naturally, the case referrd to above did not travel free and easy, but, on the other hand, it was on the very verge of lameness, and could not be driven into a trot; of course, from an educational standpoint, this incident carried considerable weight, for the cause of the soreness was evidently plain enough to be seen by even the most inexperiencd, especially after I had pointed it out as the cause, and I believe that demonstrations of this character made in the presence of the public, the horse-owning public, would go a great way toward educating them to better comprehend the responsibility attached to the entire procedure of shoeing the horse.

It is hardly necessary to state that the shoes were removed from this animal immediately after the work was passed upon, and then he was re-shod, with special attention being paid to the weak sole, and after this traveled as free and easy as of old.

Some of the shoes were fitted too narrow, some too short; in some cases it was necessary to rasp off the wall in order to make a neat job of it. Some drove their nails very uneven, some nails going up two inches, others hardly an inch; some cut large grooves under the nails, in order to make a neat job of it. This made the job look rather unsightly, and certainly does more or less damage to the wall. Others did too much rasping on the wall in their attempt to finish up the job, especially above the nails.

I am not criticising the work of the several contestants, but simply stating the facts that I, as judge of the contest, passed on, and I am willing to go on record as saying that if all of the horses in the United States, or the world, for that matter, were as well shod as this bunch of colts were, with the one exception mentioned above, it would be a Godsend and a blessing to many a poor, old, sore-footed, faithful friend of man. And it would be the direct means of saving of millions of dollars to the horse owners, and also the direct means of saving the lives of thousands of horses yearly.

IMPRESSIONS ON THE PUBLIC.

Now, to take a glimpse at the contest from the public's standpoint. After the shoeing was finished and each job passed on, the public was permitted to view the work at close range, and I'll wager that many a farmer, his wife and children, will head right for the horseshoeing tent at the next Iowa State Fair. It was really interesting to notice the interest taken in this work, the questions asked, and, pardon the remark, the ignorance displayed, in regard to the knowledge, or, rather, lack of knowledge, pertaining to the hoof of the horse. Actually, I met farmers there, owners of any numbers of horses, who would lead you to believe that they did not know that the hoof of the horse grew, that it was a sensitive structure, endowed with the most delicate and sensitive mechanism and organism imaginable, and that the least deviation from right, in working on it, not only injures the foot alone, but that as the foundation of the whole body, it renders the animal absolutely useless for the time being, until the harm done is remedied, if possible. In innumerable cases this is at times impossible, and the animal must either be destroyed, or, far worse yet, travel through its miserable existence a life-long cripple.

One rancher asked me to show him just where it was safe to drive a nail. He said he did his own shoeing, and that the only way he could tell that the nail was not going into the right place was by the animal letting him know that it was being hurt, or by drawing blood. On asking him what he usually did after he drove a nail into the sensitive laminae, he laughed and said: "Oh, I simply turn them loose and let them rustle around until the next season, stating that he had "jimmed" (as he called it) as high as ten to fifteen good cow-ponies in one season by driving nails into their feet. Now, to hear a man, apparently intelligent, tell one a tale like the above makes one shudder and wonder if we really are living in the Year of Our Lord 1914.

The state of Iowa, in promoting this contest, does so with the object in view not to make speed contests alone, but educational contests, to educate the public, and to rightly impress them with the operation of protecting the main organ of the horse, the organ that we must keep in working order at all times, the organ that without which the whole animal is rendered useless as a working tool for a man. "No foot, no horse." How true, but how abused, is this very foundation of the noble animal; it is cut, rasped, burned and mutilated until he is rendered useless, and is sent to a premature death.

It is wonderful to note the thousands of good, young, finely built animals that are employed upon the streets of our large cities; they're brought in with the best of feet and limbs, full of vim, vigor and vitality, but in a year, or probably two years, they are advertised as "sore-footed," suitable for farmers' use, and are again returned to the country, worn out, haggard looking wrecks of their former selves. What caused this change? Dear reader, you know as well as I do that the majority, the great majority, is caused by bad and indifferent shoeing; not ignorance of the principles of shoeing, but carelessness, such as excessive cutting out of the sole, frog and bars, excessive use of the rasp, both on the wall and sole portion of the hoof, burning the sole, ill-fitting shoes, nail wounds, and a hundred and one other little neglected duties that appear as the "chasm," as it were, by which we designate the "good" from the "bad" mechanic, the careful from the careless mechanic; the man who holds the steady job from the "bum."

If other states would follow in the foot-steps of Iowa, these contests would eventually become one of the best, grandest and most humane attempts ever promoted by man for the good and welfare for our most noble animal.

There is no reason why a good, sound, young animal should not serve his master for ten years at least, instead of only two or three, and I firmly believe this possible if we could avoid the numerous foot troubles that are brought on by inferior or neglected shoeing.

In connection with contests of this character, it would be a good idea to give prizes for pathological shoeing and shoeing diseased feet, illustrating the most up to date and practical methods for the treatment of corns, side and ring bones, quarter and toe cracks or any other foot or leg trouble that may yield to mechanical aid, how to make and fit a bar shoe properly, the benefits derived from a side calk set here or there on a shoe, for certain cases. Things like the above would prove of great interest to both the public and also the horseshoers, and it would have the desired effect most sought; namely, education for the masses.

When shoeing a case of lameness, it would be an excellent idea to have a practical man, well posted in anatomy, to lecture during the procedure, explaining each act of the operation, how it should be done, and why it must be done so.

I believe that practical demonstrations of this class will eventually be held in connection with most of our larger fairs, and should be held at every small fair. Let the local horseshoers get together and hold similar contests; it would bring them together at least once a year and they could exchange their ideas and experiences and thereby add to their store of knowledge, become friendly with their neighbors and become more enlightened, consequently better mechanics and men.

Awards in Live Stock Departments, Iowa State Fair and Exposition, 1914.

HORSE DEPARTMENT.

SUPERINTENDENT........................C. F. CURTISS, Ames.

PERCHERON.

EXHIBITORS.

Geo. Baker, Newton; Brown & Walker, Clarinda; W. H. S. Barnett, Dexter; John Cameron, Audubon; W. S. Corsa, White Hall, Ill.; H. D. Clore, Lucas; Crawford & Griffin, Newton; Champlin Bros., Clinton; Clell Collier, Osceola; Champlin & Ruppel, Ames; C. B. Dannen & Sons, Melbourne; Dunham's, Wayne, Ill.; L. A. Dennis, Kilduff; Geo. Eggert, Newton; Harry Early, Liscomb; W. S. Fox, Genoa, Neb.; C. G. Good, Ogden; E. N. Gates, Newton; J. M. Gross, Adel; Hawthorn Farm, Lake County, Ill.; H. Hursh, Hudson; R. W. Hoit, Beacon; John S. Horswell, Estherville; W. L. Joy, Grand Junction; J. T. Judge, Carroll; Lakewood Farm, Rock Rapids; H. C. Lowrey, Nevada; Morris Bros., Stockport; George W. Murray, Estherville; M. J. Nelson, Cambridge; C. P. Quirin, Marcus; J. C. Redman, Altoona; Frank M. Shaw, Oneida, Ill.; Singmaster & Sons, Keota; W. W. Seeley, Stuart; Geo. H. Stultz, Winterset; Trumans' Pioneer Stud Farm, Bushnell, Ill.; W. M. Tice, Sully; Ed Trester, Winterset; R. P. Wait, Reynolds, Ill.; H. P. Wilkinson, Mitchellville; R. J. Wallace, Gravity.

AWARDS.

JUDGES......................ALEX GALBRAITH, DeKalb, Ill.
R. E. DRENNEN, Canora, Sask., Canada.

Stallion Four Years or Over—First, Champlin & Ruppel on Kronprinz, 1347; second, Dunham's on Kapon, 97589 (90765); third, Singmastser & Sons on Jalap, 80583 (85614); fourth, Lakewood Farm on Agitator, 77533; fifth, C. G. Good on Intrepide, 102924 (81321); sixth, R. P. Wait on Isadore, 71614 (79888).

Stallion Over Three, Under Four—First, Dunham's, Lycee (102746); second, Singmaster & Sons on Luron, 99039 (101048); third, John Cameron on Commander, 82972; fourth, Wm. Crownover on Lavardac, 101486; fifth, R. W. Hoit on Lent, 101770 (101841); sixth, Singmaster & Sons on Lical, 99042 (103235),

Stallion Over Two, Under Three—First, Trumans' Pioneer Stud Farm on Mazagran, (109179); second, Singmaster & Sons on Malais, 101335 (107608); third, Truman's Pioneer Stud Farm on Minutier, (106813); fourth, W. S. Corsa on Carlotheon, 91137; fifth, W. H. S. Barnett on Major Lewis, 86977.

Stallion Over One. Under Two—First, Singmaster & Sons on McClure's Choice, 99964; second, W. M. Tice on Dudie; third, Brown & Walker on Helion, 97205; fourth, Singmaster & Sons on Nadir, 99064 (111542).

Stallion Foal—First, Singmaster & Sons, on Keota Jalap; second, Lakewood Farm on Tambeau; third, Brown and Walker on Horatio, 104965; fourth, Harry Early on Medallion; fifth, Brown & Walker on Halton, 104964.

Stallion Three Years or Over, Bred by Exhibitor—First, John Cameron on Commander, 82972; second, Lakewood Farm on Agitator, 77533; third, Singmaster & Sons on Stanley S., 87701; fourth, H. D. Clore on Hercules, 91118.

Stallion Under Three, Bred by Exhibitor—First, Singmaster & Sons on McClure's Choice, 99964; second, W. S. Corsa on Carlotheon, 91137; third, W. H. S. Barnett on Major Lewis, 86977; fourth, Brown & Walker on Helion, 97205; fifth, Singmaster & Sons on Keota Jalap.

LYCEE—Champion Percheron Stallion at the Iowa State Fair and Exposition, 1914; owned by Dunham,s Wayne, Ill.

Yeld Mare Four Years or Over—First, Harry Early on Hermine, 102198 (76134); second, Trumans' Pioneer Stud Farm on Joie, (83942); third, Singmaster & Sons on Jocande, 82289 (96967); fourth, Singmaster & Sons on Kibitka, 91262 (97695);; fifth, C. B. Dannen & Sons on Isterie, 74606 (80075).

Mare and Foal, Mare to Count 50 per cent, Foal 50 per cent—First, Brown & Walker on Gargouille, 60048; second, J. T. Judge on Juvenilia, 87259 (86622); third, Harry Early on Gastraigie, 61459 (69881); fourth, J. A. Loughbridge & Sons on Henriette, 74334.

Filly Over Three, Under Four—First, Harry Early on Florence II, 85529; second, Dunham's on Lurette, 9740 (102707); third, Hawthorn Farm on Kegistere, 98291 (103413); fourth, Singmaster & Sons on Luth 91275 (98978); fifth, Dunham's on Pink Clarissa, 81140.

Filly Over Two, Under Three—First, W. S. Corsa on Caroress, 91032; second, Geo. Baker on Migon, 95426; third, W. S. Corsa on Radbie, 94317; fourth, Singmaster & Sons on Malice, 99132 (108026); fifth, Singmaster & Sons on Meninge, 99056 (108428).

Filly Over One, Under Two—First, W. S. Corsa on Carnante, 94321; second, W. S. Corsa on Folito II, 94322; third, Geo. Baker on Neva; fourth, Brown & Walker on Helen Helix, 97206; fifth. Singmaster & Sons on Maple Grove Snowball, 99965.

Mare Foal—First, J. T. Judge; second, M. J. Nelson on Grace Kaoline, 105286; third, Singmaster & Sons on Keota Huppee; Fourth, Morris Bros. on Concoran; fifth, Morris Bros. on Stockport Miss.

Mare Three Years or Over, Bred by Exhibitor—First, Dunham's on Pink Clarissa, 81140; second, Lakewood Farm on Elsetta, 85534; third, C. B. Dannen & Sons on Bird, 79828; fourth, C. B. Dannen & Sons on Lola, 72769; fifth, Lakewood Farm on Rometta, 85520.

Mare Under Three Years, Bred by Exhibitor—First, W. S. Corsa on Carnoress, 91032; second, W. S. Corsa on Folito II, 94322; third, Geo. Baker on Neva; fourth, Geo. Baker on Migon, 95425; fifth, W. S. Corsa on Radbie, 94317.

Champion Stallion—First, Dunham's on Lycee, (102746); second, Singmaster & Sons on McClure's Choice, 99964.

Champion Mare—First, Harry Early on Hermine, 102198 (76134); second, Harry Early on Florence II, 95529.

Champion Stallion, Owned in Iowa—First, Singmaster & Sons on McClure's Choice, 99964; second, Singmaster & Sons on Luron, 99039 (101048).

Champion Mare, Owned in Iowa—First, Harry Early on Hermine, 102198 (76134); second, Harry Early on Florence II, 85529.

Stallion and His Get—First, Lakewood Farm; second, Singmaster & Sons.

Produce of Mare—First, Singmaster & Sons; second, Lakewood Farm; third, Brown & Walker; fourth, W. H. S. Barnett; fifth, C. B. Dannen & Sons.

Grand Display—First, W. S. Corsa; second, Lakewood Farm; third, C. B. Dannen & Sons.

Five Stallions Owned by Exhibitor—First, Singmaster & Sons.

SPECIAL PRIZES OFFERED BY THE PERCHERON SOCIETY OF AMERICA FOR 1914.

Stallion Three Years Old or Over Bred and Owned by Exhibitor—First, John Cameron on Commander, 82972; second, Lakewood Farm on Agitator, 77533; third, Singmaster & Sons on Stanley S., 87701.

Stallion Under Three, Bred and Owned by Exhibitor—First, Singmaster & Sons on McClure's Choice, 99964; second, W. S. Corsa on Carlotheon, 91137; third, W. H. S. Barnett on Major Lewis, 86977.

Champion Stallion, Bred and Owned by Exhibitor—First, Singmaster & Sons McClure's Choice; second, John Cameron on Emperor.

Mare Three Years or Over, Bred and Owned by Exhibitor—Dunham's on Pink Clarissa, 81140; second, Lakewood Farm on Elsetta, 85534; third, C. B. Dannen & Sons on Bird, 79828.

Mare Under Three, Bred and Owned by Exhibitor—First, W. S. Corsa on Carnoress, 91032; second, W. S. Corsa on Folito II, 94322; third, Geo. Baker on Neva.

Champion Mare, Bred and Owned by Exhibitor—First, W. S. Corsa on Carnoress; second, W. S. Corsa on Folito II, 94322.

Get of Stallion—First, W. S. Corsa on Carnot; second, Brown & Walker on Helix.

Produce of Mare—First, Singmaster & Sons; second, Lakewood Farm; third, Brown & Walker.

Champion Stud—First, W. S. Corsa; second, Lakewood Farm; third, C. B. Dannen & Sons.

Five Stallions, Owned by Exhibitor—First, Singmaster & Sons; second, Dunham's.

Champion Stallion, Open Class—First, Dunham's on Lycee (102746); second, Singmaster & Sons on McClure's Choice, 99964.

Champion Mare, Open Class—First, Harry Early on Hermine, 102198 (76134); second, Harry Early on Florence II, 85529.

NATIONAL DRAFT HORSE BREEDERS' FUTURITY OPENED AND GUARANTEED BY THE CHICAGO DAILY LIVE STOCK WORLD.

JUDGES .... PETER HOPLEY, Lewis, Iowa.
ALEX GALBRAITH, DeKalb, Ill.

Percheron Stallions—First, Singmaster & Sons on McClure's Choice, 99964; second, W. M. Tice on Dudie; third, Brown & Walker on Helion, 97205; fourth, J. A. Dennis on Magnet; fifth, W. S. Corsa on Carbon 2nd, (100017); sixth, Singmaster & Sons on Keota Idea; seventh, Crawford & Griffin on Navarre; eighth, C. B. Dannen & Sons on Jeferies; ninth, J. T. Judge on Cyclone, 104054; tenth, C. B. Dannen & Sons on Josiah; eleventh, Crawford & Griffin on Nogent, 104287; twelfth, John S. Horswell on Briquet.

Percheron Fillies—First, W. S. Corsa on Carnate, 94321; second, W. S. Corsa on Folito 2nd, 94322; third, Geo. Baker on Neva; fourth, Brown & Walker on Helen Helix, 97206; fifth, Singmaster & Sons on Maple Grove Snowball, 99965; sixth, Brown & Walker on Hazel Helix, 103829; seventh, W. S. Corsa on Carnorada, 100016; eighth, M. J. Nelson on Remona; ninth, Brown & Walker on Harriet, 103828; tenth, R. H. Hoit on Madge, 104618; eleventh, R. P. Wait on Emma Pearl, 105727; twelfth, Geo. W. Murray on Jumannette, 105403.

CLYDESDALE.

EXHIBITORS.

C. R. & H. S. Barron, Elkton, S. D.; Bedminister Farm, Bedminister, N. J.; E. J. Edwards, Alta; H. Farris Ford, Storm Lake; Alex Galbraith & Son, DeKalb, Ill.; J. W. Hillman, Dana; Hildebrand Bros., Gladbrook; W. V. Hixson, Marengo; E. J. Korns, Hartwick; Morris Bros., Stockport; McLay Bros., Janesville, Wis.; James MacGough, Williamsburg; James Pedley, Britt; A. G. Soderberg, Osco, Ill.; South Bros., Orion, Ill.; W. W. Weston & Son, Audubon.

AWARDS.

JUDGE .... DONALD CAMPBELL, Hannaford, N. D.

Stallion Four Years or Over—First, McLay Bros. on King Norman, 16159; second, H. Harris Ford on Prince Cedric, 16656; third, James Pedley on Forest King, 14076; fourth, McLay Bros. on King's Buckler, 16158; fifth, A. G. Soderberg on Scotland's Majesty, 17644; sixth, W. V. Hixson on Stewart Favorite, 15505.

Stallion Over Three, Under Four—First, James MacGough on Max, 18127; second, A. G. Soderberg on Come Again, 16920; third, W. V. Hixson on Baron Caliph, 16592; fourth, A. G. Soderberg on Vigor, 18132; fifth, W. V. Hixson on Glenco, 16596.

Stallion Over Two, Under Three—First, W. V. Hixson on Victor Favorite, 17208; second, E. J. Korns on Warren's Favorite, 17071; third, H. Harris Ford on Donald's Pride, 17546; fourth, South Bros.; fifth, South Bros. on Hope's Price, 17019.

Stallion Over One, Under Two—First, A. G. Soderberg on Hope's Pride, 18135; second, McLay Bros. on King's Emblem, 17886; third, W. V. Hixson on The Favorite Prince, 17902; fourth, H. Harris Ford on Prince Fearless, 18112; fifth, James MacGough on King's Voucher, 17850.

Stallion Foal—First, McLay Bros.; second, C. R. & H. S. Barron on Elegant Prince; third, W. V. Hixson on Flossie's Favorite; fourth, H. Harris Ford on Prince Forward.

Stallion Three Years or Over, Bred by Exhibitor—First, A. G. Soderberg on Come Again, 16920; second, A. G. Soderberg on Osco Price, 11226; third, James Pedley on Forest King, 14076; fourth, W. V. Hixson on Baron Caliph, 16592; fifth, W. V. Hixson on Glenco, 16596.

Stallion Under Three, Bred by Exhibitor—First, McLay Bros. on King's Emblem, 17886; second, A. G. Soderberg on Hope's Pride, 18135; third, W. V. Hixson on Victor Favorite, 17071; fourth, E. J. Korns, Warren's Favorite, 17071.

Yeld Mare, Four Years or Over—First, McLay Bros. on Florentia, 12574; second, C. R. & H. S. Barrons on Euphemia Walls, 14426; third, W. V. Hixson on Clifton Bell, 15530; fourth, A. G. Soderberg on Winsome Princess, 12841; fifth, McLay Bros. on Queen of Time, 15453.

Mare and Foal, Mare to Count 50%, Foal 50%—First, McLay Bros. on Princess Handsome, 9758; second, H. Harris Ford on Una, 16194 (25422); third, W. V. Hixson on May Palmerston, 15994; fourth, W. V. Hixson on Flossie, 15862; fifth, C. R. & H. S. Barron on Mayflower, 15699.

Filly Over Three, Under Four—First, C. R. & H. S. Barron on Fanny, 16406; second, H. Harris Ford on Princess Mae, 16807; third, A. G. Soderberg on Osco Bell, 16279; fourth, James MacGough on Maple Hurst Belle, 16649; fifth, J. W. Hillman on Wayside Princess, 16500.

Filly Over Two, Under Three—First, W. V. Hixson on Lady Stewart, 17214; second, McLay Bros. on Buchlyvie Lady, 17256; third, W. V. Hixson on Lady Favorite, 16926; fourth, A. G. Soderberg on Osco Gem, 16922; fifth, W. W. Weston & Son on Winsome Bessie, 17369.

Filly Over One, Under Two—First, W. V. Hixson on Palmerston's Favorite, 17899; second, C. R. & H. S. Barron on Lady May, 17823; third, C. R. & H. S. Barron on Evangeline, 17823; fourth, A. G. Soderberg on Osco Darling, 18134; fifth, South Bros. on King Norman's Beauty.

Mare Foal—First, McLay Bros.; second, W. V. Hixson; third, Morris Bros.; fourth, A. G. Soderberg; fifth, J. W. Hillman.

Mare Three Years or Over, Bred by Exhibitor—First, McLay Bros. on Princess Handsome, 9758; second, W. V. Hixson on Flossie, 15862; third, C. R. & H. S. Barron on Fanny, 16406; fourth, A. G. Soderberg on Osco Bell, 16279; fifth, W. V. Hixson on May Palmerston, 15994.

Mare Under Three Bred by Exhibitor—First, W. V. Hixson on Lady Stewart, 17214; second, McLay Bros.; third, W. V. Hixson on Palmerston's Favorite, 17899; fourth, C. R. & H. S. Barron on Lady May, 17823; fifth, C. R. & H. S. Barron on Evangeline, 17826.

Champion Stallion—First, McLay Bros. on King Norman, 16159; second, McLay Bros. on King's Emblem, 17886.

Champion Mare—First, W. V. Hixson on Lady Stewart; second, McLay Bros. on King's Princess.

Champion Stallion Owned in Iowa—First, W. V. Hixson on Victor Favorite, 17208; second, James MacGough on Max, 18127.

Champion Mare Owned in Iowa—First, W. V. Hixson on Lady Stewart; second, W. V. Hixson on Palmerston's Favorite, 17899.

Stallion and His Get—First, McLay Bros.; second, W. V. Hixson; third, C. R. & H. S. Barron; fourth, H. Harris Ford.

Produce of Mare—First, South Bros.; second, W. V. Hixson; third, W. V. Hixson; fourth, C. R. & H. S. Barron.

Grand Display—First, McLay Bros.; second, W. V. Hixson; third, C. R. & H. S. Barron; fourth, A. G. Soderberg.

Five Stallions Owned by Exhibitor—First, W. V. Hixson; second, McLay Bros.

KING NORMAN—Champion Clydesdale Stallion at the Iowa State Fair and Exposition, 1914; owned by McLay Bros., Janesville, Wis.

NATIONAL CLYDESDALE BREEDERS' FUTURITY.

Owned and Guaranteed by the Chicago Daily Live Stock World.

JUDGES..................DONALD CAMPBELL, Hannaford, N. D.
LESLIE SMITH, St. Cloud, Minn.

W. J. KENNEDY, Ames, Iowa.

Stallions—First, A. G. Soderberg on Hope's Prince, 18135; second, McLay Bros. on King's Emblem; third, W. V. Hixson on The Favorite Prince, 17902; fourth, H. Harris Ford on Prince Fearless, 18112; fifth, James MacGough on King's Voucher, 17850; sixth, A. G. Soderberg on Queen's Prince, 18133; seventh, A. G. Soderberg on William Woodmack, 17909; eighth, McLay Bros. on Connoisseur.

Fillies—First, W. V. Hixson on Palmerston's Favorite, 17899; second, C. R. & H. S. Barron on Lady May, 17823; third, C. R. & H. S. Barron on Evangeline, 17826; fourth, A. G. Soderberg on Osco Darling, 18134; fifth, South Bros. on King Norman's Beauty; sixth, W. V. Hixson on Favorite's Darling, 17897; seventh, McLay Bros. on Lady Serene; eighth, J. W. Hillman on Wayside Clara, 17658.

ENGLISH SHIRES.

EXHIBITORS.

Dan Boyd, Jr., Menlo; Wm. Crownover, Hudson; George Eggert, Newton; J. M. Gross, Adel; J. L. Howard, Ankeny; H. Hursh, Hudson; Frank E. Huston, Waukee; D. M. Johnston, Storm Lake; Thos. Kiddoo & Son, Joy, Illinois; George M. McCray, Fithian, Illinois; G. W. Smith & Son, Altoona; A. G. Soderberg, Osco, Illinois; Trumans' Pioneer Stud Farm, Bushnell, Illinois; J. H. Thompson, Elliott; H. P. Wilkinson, Mitchellville.

AWARDS.

JUDGE............................R. B. OGILVIE, Chicago, Ill.

Stallion Four Years or Over—First, Trumans' Pioneer Stud Farm on Cowley Triumph (29268); second, Thos. Kiddoo & Sons on Osco Grand Prince, 11845; third, Trumans' Pioneer Stud Farm on Darleston King (29290); fourth, Trumans' Pioneer Stud Farm on Heckington Chief (30520); fifth, H. P. Wilkinson Bros. on Romulus V., 14573 (28722).

Stallion Over Three Under Four—First, Trumans' Pioneer Stud Farm on Boro Blusterer (31140); second, Trumans' Pioneer Stud Farm on Cosford Buchanan (31119); third, Wm. Crownover on Dunchurch Baronet, 14570; fourth, Frank E. Huston on Dunsmore Sentinel, 14186; fifth, Wm. Crownover on Holdenby Adonis, 13519.

Stallion Over Two Under Three—First, Trumans' Pioneer Stud Farm on Royal Patch (31143); second, Trumans' Pioneer Stud Farm on Fayette Rambler, 13794; third, Geo. M. McCray on Royal Surprise, 13579; fourth, H. Hursh on Wycombe Superior, 15135.

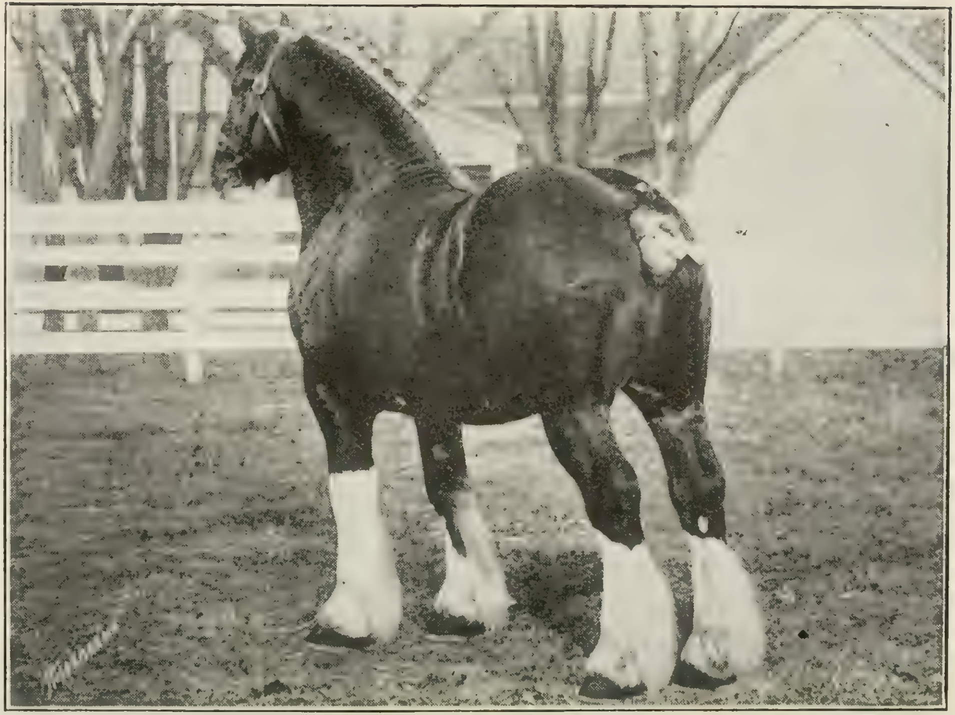
Stallion Over One, Under Two—First, Trumans' Pioneer Stud Farm on Fleetwood Laddie, 14250; second, Geo. M. McCray on Royal Moors, 14898; third, Geo. M. McCray on Royal Pilot, 14534; fourth, Wm. Crownover on Paramount Milton.

Stallion Foal—First, Geo. M. McCray on Royal Fame; second, J. M. Gross on Frank L; third, J. L. Howard on Starlight Prince, 15222.

Stallion Under Three, Bred by Exhibitor—First, Geo. M. McCray on Royal Flame; second, Geo. M. McCray on Royal Moors, 14898; third, Geo. M. McCray on Royal Pilot, 14534; fourth, Wm. Crownover.

Yeld Mare Four Years or Over—First, Geo. M. McCray on Coldham Surprise, 11980; second, A. G. Soderberg on Wallington Sunbeam, 13346 (69112); third, Trumans' Pioneer Stud Farm on Normandy Sweet Briar (68038); fourth, H. Hursh on Haring Golden Lass, 14834.

Mare and Foal, Mare to Count 50%, Foal 50%—First, Geo. M. McCray on Elvetham Flora, 12750; second, J. M. Gross on Betty; third, J. L. Howard on Ankeny Starlight, 10529; fourth, H. Hursh on Verona Lillie, 9585.



BORO BLUSTERER—Champion Shire Stallion at the Iowa State Fair and Exposition, 1914; owned by Truman's Pioneer Stud Farm, Bushnell, Ill.

Filly Over Three, Under Four—First, Wm. Crownover on Fuschia, 14571; second, Geo. M. McCray on Moulton Tagalie, 73473; third, H. P. Wilkinson Bros. on Clifton Daisy, 14582 (70247); fourth, H. P. Wilkinson on Flower, 14581 (73184).

Filly Over Two, Under Three—First, Trumans' Pioneer Stud Farm on March Forest Queen (73180); second, H. P. Wilkinson Bros. on Yatesbury Sharpely, 14584 (73188); third, Frank E. Huston on Pinekrest Primrose, 13225; fourth, Geo. Eggert on Oak Lawn Easter Rose, 13247.

Filly Over One, Under Two—First, Geo. M. McCray on Royal Jolly, 14899; second, Thos. Kiddoo & Sons on Princess Beauty II, 14272; third, Thos. Kiddoo & Sons on Blandina, 14274; fourth, Thos. Kiddoo & Sons on Favorite Duchess, 14273.

Mare Foal—First, Thos. Kiddoo & Son on Verona Belle, 15303; second, G. W. Smith & Son; third, H. P. Wilkinson Bros., Elmland Charm, 15299; fourth, Thos. Kiddoo & Son on Gwendolin, 15300.

Mare Three Years or Over, Bred by Exhibitor—First, Trumans' Pioneer Stud Farm on Trumans' Lady Patch, 14257; second, A. G. Soderberg on Osco Princess, 12825; third, G. W. Smith & Son on Mabel Smith, 11399; fourth, Thos. Kiddoo & Son on Rowena Belle, 10346.

Mare Under Three, Bred by Exhibitor—First, Geo. M. McCray on Royal Jolly, 14899; second, Thos. Kiddoo & Son on Favorite Duchess, 14273; third, Thos. Kiddoo & Son on Blandina, 14274; fourth, Thos. Kiddoo & Son on Princess Beauty II, 14272.

Champion Stallion—First, Trumans' Pioneer Stud Farm on Boro Blusterer; second, Trumans' Pioneer Stud Farm on Royal Patch.

Champion Mare—First, Geo. M. McCray on Coldham Surprise; second, A. G. Soderberg on Wallington Sunbeam.

Champion Shire Mare, Coldham Surprise, 11980, owned by Geo. N. McCray, Fithian, Illinois.

Champion Stallion, Owned in Iowa—First, Frank E. Huston on Dunsmore Sentinel; second, Wm. Crownover on Dunchurch Baronet, 14570.

Champion Mare Owned in Iowa—First, H. Hursh on Hering Golden Lass; second, H. Hursh on Fuschia.

Stallion and His Get—First, Thos. Kiddoo & Son.

Produce of Mare—First, Geo. M. McCray; second, Thos. Kiddoo & Son; third, A. G. Soderberg; fourth, Frank E. Huston.

Grand Display—First, Thos. Kiddoo & Son.

Five Stallions Owned by Exhibitor—First, Trumans' Pioneer Stud Farm.

SPECIAL PRIZES OFFERED BY THE AMERICAN SHIRE HORSE ASSOCIATION.

Champion Stallion, Any Age—First, Trumans' Pioneer Stud Farm on Boro Blusterer (31140).

Champion Mare, Any Age—First, Geo. M. McCray on Coldham Surprise, 11980.

Best American Bred Stallion, Any Age—First, Trumans' Pioneer Stud Farm on Fleetwood Laddie.

Best American Bred Mare, Any Age—First, Geo. M. McCray on Royal Jolly.

NATIONAL SHIRE DRAFT HORSE BREEDERS' FUTURITY. OPENED AND GUARANTEED BY THE CHICAGO DAILY LIVE STOCK WORLD.

JUDGES.....................R. B. OGILVIE, Chicago, Ill.
A. LATIMER WILSON, Creston, Iowa.

Fillies—First, Geo. M. McCray on Royal Jolly; second, Thos. Kiddoo & Son on Princess Beauty 2nd, 14274; third, Thos. Kiddoo & Son on Blandina, 14274; fourth, Thos. Kiddoo & Son on Favorite Duchess, 14273; fifth, Geo. Eggert on Marie Brilliant, 14624; sixth, Geo. McCray on Royal Sylvia; seventh, R. P. Wilkinson & Sons on Elmland Bold Duchess, 14346.

Stallions—First, Trumans' Pioneer Stud Farm on Fleetwood Laddie, 15250; Geo. M. McCray on Royal Moors; third, Geo. M. McCray on Royal Pilot; fourth, Wm. Crownover on Paramount Milton; fifth, A. G. Soderberg on Sylvia King, 15258; sixth, Geo. Eggert on James Echo, 15213; seventh, Geo. Eggert on Newton King Oscar, 14669.

BELGIAN.

EXHIBITORS.

Wm. Crownover, Hudson; Crawford & Griffin, Newton; Champlin Bros., Clinton; W. C. Estes, Packwood; C. H. Eversold, Ankeny; George Eggert, Newton; R. F. French, Independence; J. F. Gift, Dallas Center; C. G. Good, Ogden; Harry E. Hopper, Indianola; Hildebrand Bros., Gladbrook; Chas. Irvine, Ankeny; H. Lefebure, Fairfax; J. A. Loughridge, Delta; G. A. McCarty, Princeville, Ill.; J. D. McDermott, Wiota; W. C. McDermott, Wiota; Carl A. Rosenfeld, Kelly; J. C. Ritchie, Stratford; Singmaster & Sons, Keota; Trumans' Pioneer Stud Farm, Bushnell, Ill.; J. F. Thompson, Ankeny; Whip Tree Farm, Pioneer; W. A. Wickersheim, Ankeny.

AWARDS.

JUDGES........................W. J. KENNEDY, Ames, Iowa.

Stallion Four Years or Over—First, Wm. Crownover on Farceur, 7332; second, Henry Lefebure on Clarion de Rosseignies, 7978; third, R. F. French on Ergot, 7611; fourth, Crawford & Griffin on Belvedere, 7246; fifth, H. Lefebure on Jules Remi, 6166.

Stallion Over Three, Under Four—First, Champlin Bros. on Paul de Roosbeke, 7786; second, Geo. Eggert on Combattant De Granty, 8214; third, Crawford & Griffin on Pacha, 8246; fourth, Chas. Irvine on Volcan II, 7550 (72912); fifth, J. F. Thompson on Bienfait, 7588 (80854).

Stallion Over Two, Under Three—First, Chas. Irvine on Ruban, 8423 (82332); second, Trumans' Pioneer Stud Farm on Figaro (91480); third, Champlin Bros. on Marck, 7785; fourth, C. W. McDermott on Governor Major, 6931; fifth, Trumans' Pioneer Stud Farm on Paul de Wiels (91476).

Stallion Over One, Under Two—First, Chas. Irvine on Irvindale Jean, 8426; second, C. W. McDermott on Prince Imperial, 8299; third, W. C. Estes on Prize Winner, 7651; fourth, Whip Tree Farm on Orderly, 8392.

Stallion Foal—First, W. C. Estes on Ob; second, H. Lefebure on Indigine; third, R. F. French on Jules de Ergot; fourth, Whip Tree Farm on Nitro.

Stallion Under Three, Bred by Exhibitor—First, Chas. Irvine on Irvinedale Jean, 8426; second, J. D. McDermott on Prince Imperial, 8299; third, W. C. Estes on Packwood Rex, 7555; fourth, W. C. Estes on Ob.

Yeld Mare, Four Years or Over—First, H. Lefebure on Anne Du Balcan; second, Chas. Irvine on Gusta; third, H. Lefebure on Fannie de Dotte; fourth, H. Lefebure on Gazetta.

Mare and Foal, Mare to Count 50%, Foal 50%—First, R. F. French on Flora; second, Wm. Crownover on Quimperlette; third, Whip Tree Farm on Marquise, 583; fourth, Geo. Eggert on Marth de Haerten, 1026; fifth, Wm. Crownover on Civette, 3065.

Filly Over Three, Under Four—First, H. Lefebure on Paula de Lens, 3047; second, Chas. Irvine on Reverse (91522); third, Chas. Irvine on Dina, 3420; fourth, H. Lefebure on Marie II d'Aulne, 3617; fifth, C. G. Good on Bessy, 3879.

Filly Over Two, Under Three—First, Chas. Irvine on Dora (106619); second, J. F. Thompson on Orpha, 3424 (89083); third, H. Lefebure on Amulette (98777); fourth, Chas. Irvine on Fayette (106615); fifth, W. C. Estes on Bay Beauty, 3379.

Filly Over One, Under Two—First, Harry E. Hopper on Jolie de Thimeon II, 4117; second, R. F. French on Lili de Comet; third, Chas. Irvine on Irvinedale Minnie, 4033; fourth, Chas. Irvine on Irvinedale Viota, 4034.

Mare Foal—First, R. F. French on June de Ergot; second, Wm. Crownover on Salome; third, Wm. Crownover on Lista; fourth, R. F. French on Cora de Ergot.

Mare Three Years or Over, Bred by Exhibitor—First, Chas. Irvine on Blue Belle, 2666; second, W. C. Estes on Lady Maude, 619; third, J. Loughridge & Sons on Madam of Delta, 2820; fourth, J. Loughridge on Portia, 2050.

Mare Under Three, Bred by Exhibitor—First, Harry E. Hopper; second, R. F. French on June de Ergot; third, R. F. French on Belle de Comet; fourth, Chas. Irvine on Irvinedale Minnie, 4033.

Champion Stallion—First, Wm. Crownover on Farceur, 7332; second, H. Lefebure on Clarion de Rosseignies (7978).

Champion Mare—First, H. Lefebure on Anna du Balcan, 3044; second, H. Lefebure on Paula de Lens, 3047.

Champion Stallion, Owned in Iowa—First, Wm. Crownover on Farceur, 7332; second, H. Lefebure on Clarion de Rosseignies (7978).

Champion Mare, Owned in Iowa—First, H. Lefebure on Anna du Balcan, 3044; second, H. Lefebure on Paula de Lens, 3047.

Stallion and His Get—First, Wm. Crownover; second, R. F. French; third, W. C. Estes.

Produce of Mare—First, W. C. Estes; second, Chas. Irvine; third, Whip Tree Farm; fourth, J. C. Ritchie.

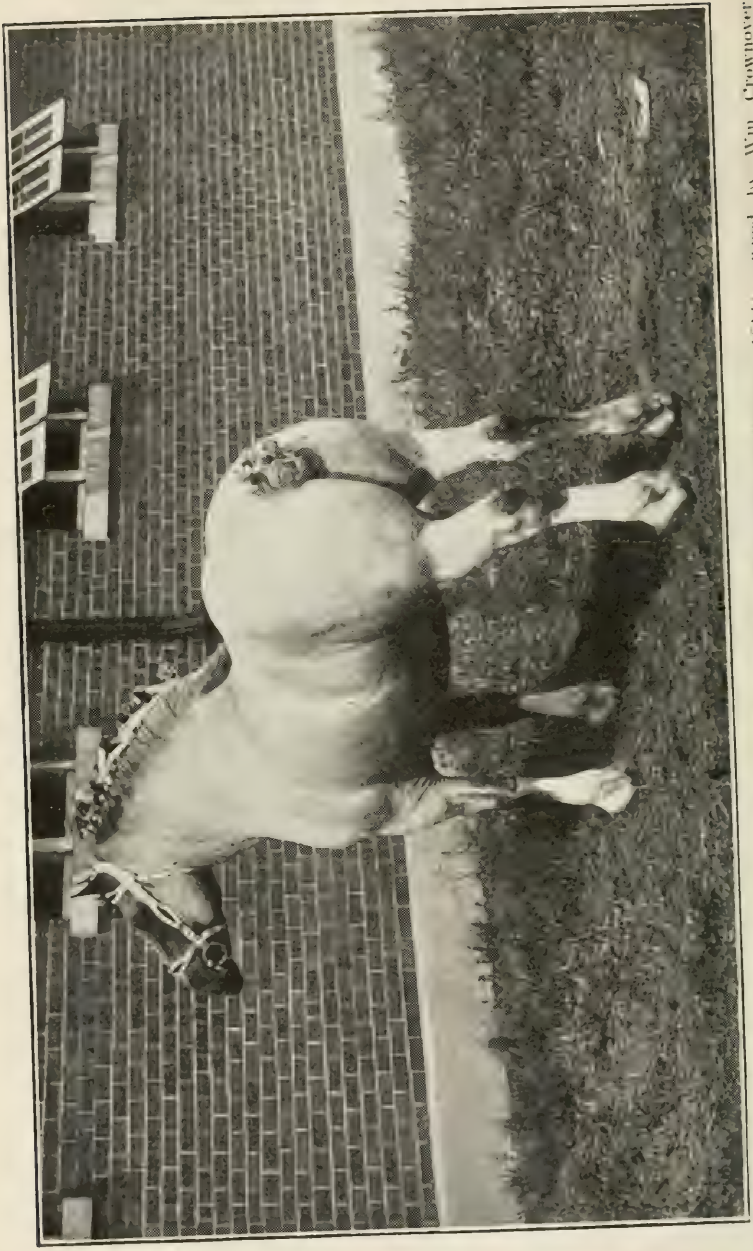
Grand Display—First, R. F. French; second, Chas. Irvine; third, J. A. Loughridge & Sons.

Five Stallions, Owned by Exhibitor—First, Chaplin Bros.; second, Chas. Irvine.

SPECIAL PRIZES OFFERED BY THE AMERICAN ASSOCIATION OF IMPORTERS AND BREEDERS OF BELGIAN DRAFT HORSES.

Stallion Four Years and Over—First, Wm. Crownover on Farceur, 7332; second, H. Lefebure on Clarion de Rosseignies, 7978; third, R. F. French on Ergot, 7611; fourth, Crawford & Griffin on Belvedere, 7246; fifth, H. Lefebure on Jules Remi, 6166.

Stallion Three Years and Under Four—First, Champlin Bros. on Paul de Roosbeke, 7786; second, Geo. Eggert on Combattant De Granty, 8214; third, Crawford & Griffin on Pacha, 8246; fourth, Chas. Irvine on Volcan II, 7550 (72912); fifth, J. F. Thompson on Bienfait, 7588 (80854).



FARCEUR—Champion Belgian Stallion at the Iowa State Fair and Exposition 1914, owned by Wm. Crownover, Hudson, Iowa.

Stallion Two Years and Under Three—First, Chas. Irvine on Ruban, 8423 (82332); second, Trumans' Pioneer Stud Farm on Figaro (91480); third, Champlin Bros. on Marck, 7785; fourth, C. W. McDermott on Governor Major, 6931; fifth, Trumans' Pioneer Stud Farm on Paul de Wiels (91476).

Stallion One Year Old and Under Two—First, Chas. Irvine on Irvinedale Jean, 8426; second, J. D. McDermott on Prince Imperial, 8299; third, W. C. Estes on Prize Winner, 7651; fourth, Whip Tree Farm on Orderly, 8392.

Mare Four Years Old and Over—First, H. Lefebure on Anna du Balcan, 3044; second, Chas. Irvine on Gusta, 4026; third, H. Lefebure on Fanny de Dotte, (98767); fourth, H. Lefebure on Gazette (98769).

Mare Three Years Old and Under Four—First, H. Lefebure on Paula de Lens, 3047; second, Chas. Irvine on Reverse (91532); third, Chas. Irvine on Dina, 3420; fourth, H. Lefebure on Marie II d'Aulne, 3617.

Mare Two Years Old and Under Three—First, Chas. Irvine on Dora (106619); second, J. F. Thompson on Orpha, 3424 (89083); third, H. Lefebure on Amulette (98777); fourth, Chas. Irvine on Fayette (106615); fifth, W. C. Estes on Bay Beauty, 3379.

Mare One Year Old and Under Two—First, Harry E. Hopper on Jolie de Thimeon II, 4117; second, R. F. French on Lili de Comet; third, Chas. Irvine on Irvinedale Minnie, 4033; fourth, Chas. Irvine on Irvinedale Viola, 4034.

Champion Stallion, All Ages Competing—First, Wm. Crownover on Farceur, 7332; second, H. Lefebure on Clarion de Rosseignies, 7978.

Champion Mare, All Ages Competing—First, H. Lefebure on Anna du Balcan, 3044; second, H. Lefebure on Paula de Lens, 3047.

Five Stallions, Property of One Exhibitor—First, Champlin Bros.; second, Chas. Irvine.

BELGIAN NATIONAL DRAFT HORSE BREEDERS' FUTURITY.

Stallions—First, Chas. Irvine on Irvinedale Jean, 8426; second, J. C. McDermott; third, W. C. Estes on Prize Winner, 7651; fourth, A. W. Hawley on Orderly, 8392; fifth, J. C. Ritchie on Frenchy; sixth, Hopper Stock Farm on Bourdon 2nd, 8499; seventh, Chas. Irvine on Irvinedale Don, 8424.

Fillies—First, Hopper Stock Farm on Jolie De Thimeon 2nd, 4117; second, R. F. French on Lili; third, Chas. Irvine on Irvinedale Minnie, 4033; fourth, Chas. Irvine on Irvinedale Violet, 4034; fifth, Hopper Stock Farm on Anna 2nd, 3756; sixth, A. W. Hawley on Ottlie, 3999; seventh, Hildebrand Bros. on Fanny de Tripser, 3983.

LEFEBBURE BELGIAN SPECIALS.

Stallions—First, Chas. Irvine on Irvinedale Jean, 8426; second, W. C. Estes on Prize Winner, 7651; third, A. W. Hawley on Orderly, 8392; fourth, J. C. Ritchie on Frenchy, 8634.

Fillies—First, Harry E. Hopper on Jolie De Thimeon 2nd, 4117; second, R. F. French on Lili De Comet, 4295; third, Chas. Irvine on Irvinedale Minnie, 4033; fourth, Chas. Irvine on Irvinedale Viola, 4034.

SUFFOLK PUNCH.

EXHIBITORS.

Hawthorn Farm, Lake county, Illinois.

JUDGE..........................W. J. KENNEDY, Ames, Iowa.

AWARDS.

Stallion Four Years or Over—First, on Westside Chieftain, 315; second, on Ashmoor Romeo, 607 (3895); third, on Darsham Onyx, 736 (4128).

Stallion Over Two, Under Three—First, on Attleborough, 666; second, Hawthorn Sunrise, 640.

Stallion Over One, Under Two—First, on Hawthorn Chieftain; second, on Hawthorn Ormond, 733; third, on Satin, 768 (778).

Stallion Foal—First, on Hawthorn Orwell, 835.

Stallion Under Three, Bred by Exhibitor—First on Hawthorn Ormond, 773; second, Hawthorn Sunrise, 640.

Yeld Mare Four Years or Over—First, on Baudsey Hebe, 650 (7388).

Mare and Foal, Mare to Count 50%, Foal 50%—First, on Burgh Darling, 653 (6946); second, on Imp. Tease, 651 (6572).

Filly Over Three Under Four—First, on Minstrel Lady, 669.

Filly Over Two, Under Three—First, The Suffragette, 670.

Filly Over One, Under Two—First, on Hawthorn Teasel, 749; second, on Hawthorn Joyce, 726.

Mare Foal—First, on Hawthorn Darling, 837.

Mare Under Three, Bred by Exhibitor—First, on Hawthorn Joyce, 726.

Champion Stallion—First on Westside Chieftain 315; second, on Attleborough, 666.

Champion Mare—First, on Burgh Darling, 653 (6946); second, on Minstrel Lady, 669.

Get of Stallion—First.

Produce of Mare—First and second.

Grand Display—First.

Five Stallions Owned by Exhibitor—First.

DRAFT GELDINGS AND MARES.

EXHIBITORS.

C. B. Dannen & Son, Melbourne; C. H. Ebersold, Ankeny; W. C. Estes, Packwood; Harry Early, Liscomb; H. Harris Ford, Storm Lake; R. F. French, Independence; C. G. Good, Ogden; Nelson Gormley, Bondurant; Hildebrand Bros., Gladbrook; J. L. Howard, Ankeny; Frank A. Huston, Waukee; J. A. Loughridge, Delta; Morris Bros., Stockport; McLay Bros., Janesville, Wis.; Geo. M. McCray, Fithian, Ill.; M. J. Nelson, Cambridge; J. C. Ritchie, Stratford; Carl A. Rosenfeld, Kelley; G. W. Smith & Son, Altoona; W. W. Seeley, Stuart; Singmaster & Sons, Keota; South Bros., Orion, Ill.; Trumans' Pioneer Stud Farm, Bushnell, Ill.

JUDGE..........................R. B. OGILVIE, Chicago, Ill.

AWARDS.

Gelding or Mare Four Years or Over—First, Nelson Gormley on Mike; second, Nelson Gormley on Mack; third, C. H. Ebersold on Don; fourth, C. H. Ebersold on Dick; fifth, W. C. Estes on Prince.

Gelding or Mare Three Years, Under Four—First, Nelson Gormley on John; second, C. H. Ebersold on Don; third, J. L. Howard on Beauty; fourth, G. W. Smith & Son on Tom.

Gelding or Mare Two Years and Under Three—First, J. L. Howard on Dolly; second, J. L. Howard on Nig.

Gelding or Mare One Year and Under Two—First, Frank E. Huston; second, Hildebrand Bros. on Nellie; third, W. C. Estes on Dick; fourth, C. H. Ebersold on Nick; fifth, C. H. Ebersold on Dan.

Horse or Filly Foal—First, Morris Bros. on Stockport Lad; second, Frank E. Huston; third, C. H. Ebersold on Joe; fourth, Hildebrand Bros. on Tripsee Jr.; fifth, Morris Bros. on Stockport Lassie.

Farmer's Team—First, Harry Early; second, Harry Early; third, Nelson Gormley; fourth, C. H. Ebersold; fifth, C. G. Good; sixth, G. W. Smith & Son.

Gelding or Mare Four Years or Over—First, Truman's Pioneer Stud Farm on Woodrow Wilson; second, Truman's Pioneer Stud Farm on Teddy Roosevelt; third, Nelson Gormley on Mack; fourth, Nelson Gormley on Mike; fifth, C. H. Ebersold on Don.

Draft Team in Harness—First, Truman's Pioneer Stud Farm; second, Nelson Gormley; third, C. H. Ebersold.

Champion Gelding or Mare—First, Truman's Pioneer Stud Farm on Teddy Roosevelt; second, Truman's Pioneer Stud Farm on Woodrow Wilson.

ROADSTERS.

EXHIBITORS.

Horace L. Anderson, Des Moines; Thomas Bass, Mexico, Mo.; J. C. Brunk, Springfield, Ill.; A. L. Champlin, Ames; Houchin & Anderson, Jefferson City, Mo.; Miss Loula Long, Kansas City, Mo.; Mr. and Mrs. O. J. Mooers, Columbia, Mo.; P. C. McNally, Dunlap; Geo. J. Peak, Winchester, Ill.; Bruce Robinson, Riverside; Ed P. Uhrich, Kansas City, Kan.; Fred Williams, Barnes City.

JUDGES......................GEO. W. PEPPER, Toronto, Canada.
W. A. DOBSON, Des Moines, Iowa.
WALTER PALMER, Ottawa, Ill.

AWARDS.

Stallion, Mare or Gelding—First, Geo. J. Peak on Tommy Doyle; second, Houchin & Anderson on Hastings Girl; third, Mr. and Mrs. O. J. Mooers on Helen Idlewood; fourth, Thos. Bass on Billy Woods.

Pair Stallions, Mare or Geldings—First, Houchin & Anderson on Billy Woods and Hastings Girl; second, Geo. J. Peak on Tommy Doyle and Tommy Piper; third, Ed P. Uhrich on Steve C. and Mate; fourth, Geo. J. Peak on Jackey and Erilla.

RUN-ABOUTS.

EXHIBITORS.

H. L. Anderson, Des Moines; Thomas Bass, Mexico, Mo.; J. C. Brunk, Springfield, Ill.; A. L. Champlin, Ames; William Daniel, Chicago, Ill.; E. A. Elliott, Des Moines; Hawthorn Farm, Lake county, Illinois; Hamilton Bros., Keota; Harris & Richardson, Mystic; Houchin & Anderson, Jefferson City, Mo.; Mr. and Mrs. O. J. Mooers, Columbia, Mo.; C. E. Monahan, Des Moines; Geo. J. Peak, Winchester, Ill.; Bruce Robinson, Riverside; William C. Seipp, Chicago, Ill.; John R. Thompson, Chicago, Ill.; C. F. Stewart, Des Moines; Ed P. Uhrich, Kansas City, Kan.; Fred Williams, Barnes City.

JUDGES......................GEO. W. PEPPER, Toronto, Canada.
W. A. DOBSON, Des Moines, Iowa.
WALTER PALMER, Ottawa, Ill.

AWARDS.

Stallion, Mare or Gelding—First, Mr. and Mrs. O. J. Mooers; second, Wm. Daniel; third, Mr. and Mrs. O. J. Mooers; fourth, Wm. C. Seipp; fifth, Hawthorn Farm.

Pair Stallions, Mares or Geldings—First, Mr. and Mrs. O. J. Mooers on Royal Regent and Advance Guard; second, Ed P. Uhrich on Rexall and Mate; third, Geo. J. Peak on Gaitwood, 46705.

Stallion, Mare or Gelding—First, Hamilton Bros. on Major; second, Bruce Robinson on Game Major; third, Horace L. Anderson on Winnie Blake; fourth, E. A. Elliott on Pickles.

FAMILY TURNOUT.

EXHIBITORS.

Thomas Bass, Mexico, Mo.; Blades & Hollman, Holliday, Mo.; A. L. Champlin, Ames; Hamilton Bros., Keota; Mr. and Mrs. O. J. Mooers, Columbia, Mo.; Geo. J. Peak, Winchester, Ill.; E. P. Uhrich, Kansas City, Kan.

JUDGES......................GEO. W. PEPPER, Toronto, Canada.
W. A. DOBSON, Des Moines, Iowa.
WALTER PALMER, Ottawa, Ill.

AWARDS.

Single Horse Family Turnout—First, A. L. Champlin on Fair Eliza; second, Mr. and Mrs. O. J. Mooers on The Chocolate Soldier; third, Ed P. Uhrich on Daisy Lee.

LADIES' TURNOUT.

EXHIBITORS.

H. L. Anderson, Des Moines; A. L. Champlin, Ames; Hamilton Bros., Keota; Houchin & Anderson, Jefferson City, Mo.; Geo. A. Heyl & Son, Washington, Ill.; Mr. and Mrs. O. J. Mooers, Columbia, Mo.; Geo. J. Peak, Winchester, Ill.; Bruce Robinson, Riverside; John R. Thompson, Chicago, Ill.

JUDGES......................GEO. W. PEPPER, Toronto, Canada.
W. A. DOBSON, Des Moines, Iowa.
WALTER PALMER, Ottawa, Ill.

AWARDS.

Single Mare or Gelding—First, Mr. and Mrs. O. J. Mooers on The Spring Maid; second, J. R. Thompson on Ebony Girl; third, Mr. and Mrs. O. J. Mooers on The Chocolate Soldier; fourth, A. L. Champlin on The Fair Eliza.

Pair Mares or Geldings, or Mare and Gelding—First, John R. Thompson on Ebony Girl and Lovely Lady; second, Mr. and Mrs. O. J. Mooers on The Pick of the Basket and Dainty Miss; third, Mr. and Mrs. O. J. Mooers on The Spring Maid and the Chocolate Soldier; fourth, A. L. Champlin.

HIGH STEPPERS AND PARK HORSES.

EXHIBITORS.

Thomas Bass, Mexico, Mo.; Chas. E. Bunn, Peoria, Ill.; A. L. Champlin, Ames; Wm. Daniel, Chicago, Ill.; E. A. Elliott, Des Moines; Hawthorn Farm, Lake county, Illinois; Hamilton Bros., Keota; Houchin & Anderson, Jefferson City, Mo.; George A. Heyl, Washington, Ill.; Harris & Richardson, Mystic; Mr. and Mrs. O. J. Mooers, Columbia, Mo.; C. E. Monahan, Des Moines; Geo. J. Peak, Winchester, Ill.; Bruce Robinson, Riverside; William C. Seipp, Chicago, Ill.; C. F. Stewart, Des Moines; John R. Thompson, Chicago, Ill.; Ed P. Uhrich, Kansas City, Kan.; Fred Williams, Barnes City.

JUDGES......................GEO. W. PEPPER, Toronto, Canada.
W. A. DOBSON, Des Moines, Iowa.
WALTER PALMER, Ottawa, Ill.

AWARDS.

Stallion, Mare or Gelding 15 to 15-2—First, Mr. and Mrs. O. J. Mooers on The Spring Maid; second, Mr. and Mrs. O. J. Mooers on Advance Guard; third, Mr. and Mrs. O. J. Mooers on The Pick of the Basket; fourth, John R. Thompson on Lovely Lady; fifth, Wm. Daniel on Jack Tar.

Stallion, Mare or Gelding 15-2 and Over—First, Mr. and Mrs. O. J. Mooers on The Count; second, John R. Thompson on Pride of Prides; third, Houchin & Anderson on Sporting Extra; fourth, Wm. C. Seipp on Gay Deceiver; fifth, Houchin & Anderson on Gayety.

Pair Stallions, Mares or Geldings 15 to 15-2—First, Jno. R. Thompson on Ebony Girl and Lovely Lady; second, Mr. and Mrs. O. J. Mooers on Royal Regent and Advance Guard; third, Mr. and Mrs. O. J. Mooers on Pick of the Basket and Dainty Miss.

Pair Stallions, Mares or Geldings Over 15-2—First, Jno. R. Thompson on Pride of Pride and Oakwood; second, Mr. and Mrs. O. J. Mooers on The Spring Maid and Hallie's Comet; third, Mr. and Mrs. O. J. Mooers on The Chocolate Soldier and the Count; fourth, A. L. Champlin.

Stallion, Mare or Gelding, Any Height—First, Mr. and Mrs. O. J. Mooers on The Pick of the Basket; second, John R. Thompson on Ebony Girl; third, Chas. E. Bunn on Dinarth Roany; fourth, Wm. C. Seipp on Billy D; fifth, Hawthorn Farm on Tollington.

Stallion, Mare or Gelding Owned in Iowa—First, A. L. Champlin on Fair Eliza; second, Hamilton Bros. on Miss Fidelity; third, Bruce Robinson on Game Major; fourth, E. A. Elliott on Pickles.

Pair Stallions, Mare or Geldings—First, Hamilton Bros.; second, A. L. Champlin.

GIG HORSES.

EXHIBITORS.

Thomas Bass, Mexico, Mo.; A. L. Champlin, Ames; Wm. Daniel, Chicago, Ill.; Hawthorn Farm, Lake county, Illinois; Houchin & Anderson, Jefferson City, Mo.; George A. Heyl & Son, Washington, Ill.; Mr. and Mrs. O. J. Mooers, Columbia, Mo.; Wm. C. Seipp, Chicago, Ill.; John R. Thompson, Chicago, Ill.; Ed Uhrich, Kansas City, Kan.

Judges......................Geo. W. Pepper, Toronto, Canada.
W. A. Dobson, Des Moines, Iowa.
Walter Palmer, Ottawa, Ill.

AWARDS.

Horses Not Exceeding 15-2—First, Mr. and Mrs. O. J. Mooers on The Spring Maid; second, Mr. and Mrs. O. J. Mooers on Advance Guard; third, Jno. R. Thompson on Lovely Lady; fourth, Wm. C. Seipp on Billy D; fifth, Wm. Daniel on Jack Tar.

Horses Over 15-2—First, Mr. and Mrs. O. J. Mooers on The Count; second, Jno. R. Thompson on Oakwood; third, Houchin & Anderson on Sporting Extra; fourth, Wm. Seipp on Gay Deceiver; fifth, Mr. and Mrs. O. J. Mooers on The Chocolate Soldier.

TANDEMS.

EXHIBITORS.

Chas. E. Bunn, Peoria, Ill.; A. L. Champlin, Ames; Houchin & Anderson, Jefferson City, Mo.; George A. Heyl & Son, Washington, Ill.; Mr. and Mrs. O. J. Mooers, Columbia, Mo.; Geo. J. Peak, Winchester, Ill.; John R. Thompson, Chicago, Ill.; Ed P. Uhrich, Kansas City, Kan.

Judges......................Geo. W. Pepper, Toronto, Canada.
W. A. Dobson, Des Moines, Iowa.
Walter Palmer, Ottawa, Ill.

AWARDS.

Tandem Team, Wheeler Over 15-2—First, Jno. R. Thompson on Pride of Prides and Oakwood; second, Mr. and Mrs. O. J. Mooers on The Count and The Chocolate Soldier; third, Mr. and Mrs. O. J. Mooers on Hallie's Comet and The Spring Maid; fourth, Geo. J. Peak on Countess Maid and Water Wagon.

Tandem Team, Wheeler Under 15-2—First, Mr. and Mrs. O. J. Mooers on The Spring Maid and Advance Guard; second, Jno. R. Thompson on Ebony Girl and Lovely Lady; third, Mr. and Mrs. O. J. Mooers on The Pick of the Basket and Dainty Miss; fourth, Geo. A. Heyl & Son on Dinarth Roany and Bess.

Tandem Team, Any Size—First, J. R. Thompson; second, Mr. and Mrs. O. J. Moores; third, C. E. Bunn; fourth, Houchin & Anderson.

UNICORNS.

EXHIBITORS.

A. L. Champlin, Ames; Mr. and Mrs. O. J. Mooers, Columbia, Mo.; Geo. J. Peak, Winchester, Ill.; John R. Thompson, Kansas City, Kan.

Judges......................Geo. W. Pepper, Toronto, Canada.
W. A. Dobson, Des Moines, Iowa.
Walter Palmer, Ottawa, Ill.

AWARDS.

Unicorn Team—First, Jno. R. Thompson on Pride of Prides and Oakwood and Ebony Girl; second, Mr. and Mrs. O. J. Mooers; third, Geo. J. Peak & Son; fourth, Mr. and Mrs. O. J. Mooers.

FOUR-IN-HAND.

EXHIBITORS.

Geo. J. Peak, Winchester, Ill.; Mr. and Mrs. O. J. Mooers, Columbia, Mo.; John R. Thompson, Chicago, Ill.

JUDGES......................GEO. W. PEPPER, Toronto, Canada.
W. A. DOBSON, Des Moines, Iowa.
WALTER PALMER, Ottawa, Ill.

AWARDS.

Road Four—First, Mr. and Mrs. O. J. Mooers; second, Jno. R. Thompson; third, Geo. J. Peak.

Park Four—First, John R. Thompson; second, Mr. and Mrs. O. J. Mooers; third, Geo. J. Peak.

CHAMPION HARNESS HORSE.

AWARDS.

Champion Harness Stallion—First, Mr. and Mrs. O. J. Mooers on Advance Guard; second, Geo. J. Peak & Son on Tommy Doyle.

Champion Harness Mare or Gelding—First, Mr. and Mrs. O. J. Mooers on The Spring Maid; second, Mr. and Mrs. O. J. Mooers on The Count.

SADDLE HORSES.

EXHIBITORS.

Chas. E. Bunn, Peoria, Ill.; Blades & Hollman, Holliday, Mo.; Thomas Bass, Mexico, Mo.; Robert Barnes, Oskaloosa; Wm. Daniel, Chicago, Ill.; Houchin & Anderson, Jefferson City, Mo.; Hamilton Bros., Keota; Harris & Richardson, Mystic; George A. Heyl, Washington, Il.; Mrs. H. B. Kinnard, Des Moines; Loula Long, Kansas City, Mo.; Mr. and Mrs. O. J. Mooers, Columbia, Mo.; E. D. Moore, Columbia, Mo.; Midge Marshall, Columbia, Mo.; Mrs. C. E. Monahan, Des Moines; Geo. J. Peak, Winchester, Ill.; Wm. H. Ridge, Shelbina, Mo.; Bruce Robinson, Riverside; B. F. Redman, Oskaloosa; H. E. Slack, Carlisle; Wm. C. Seipp, Chicago, Ill.; C. F. Stewart, Des Moines; Ed P. Uhrich, Kansas City, Kan.; Fred Williams, Barnes City.

JUDGES.............W. A. DOBSON, Des Moines, Iowa.
PORTER C. TAYLOR, Montgomery City, Mo.

FIVE GAITED.

AWARDS.

Gelding or Mare Four Years or Over—First, Blades & Hollman on Johnny Jones; second, Miss Loula Long on Maurine Fisher, 10882; third, Houchin & Anderson on Helen Hicklin; fourth, Loula Long on Czarmiva; fifth, Houchin & Anderson on Nickle Plate.

Gelding or Mare Over Three, Under Four—First, Blades & Hollman on My Idol; second, Houchin & Anderson on Polly Ann; third, Blades & Hollman on Vernon Castle; fourth, E. D. Moore on Eloise Thornton; fifth, B. F. Redman on Frances Highlander, 10718.

Stallion Four Years and Over—First, Hamilton Bros. on Art Bonta, 2267; second, Hamilton Bros. on Fitz Boy, 4482; third, C. E. Monahan on Montgomery; fourth, Fred Williams on Artis Montrose.

Stallion Over Three, Under Four—First, Bruce Robinson on Kentucky's Champ Clark, 5602.

Stallion Two Years Old Shown in Hand—First, Miss Loula Long on Garrard Hunt, 6127; second, E. D. Moore on Comedian, 6000.

Mare Two Years Old Shown in Hand—First, Blades & Hollman on Butterfly Dare; second, Miss Loula Long on Virginia Mayla, 10207.

WALK, TROT OR CANTER.

Mare or Gelding Any Age—First, Miss Loula Long on Nancy Garland; second, Houchin & Anderson on Pauline Moore; third, Wm. Daniel on Brother Mack; fourth, Miss Loula Long on My Choice; fifth, Blades & Hollman on Maxine.

Stallion Any Age—First, Hamilton Bros. on Art Bonta, 2267; second, C. E. Monahan on Montgomery, 2787; third, Hamilton Bros. on Fitz Boy, 4482; fourth, Bruce Robinson on Kentucky's Champ Clark, 5602; fifth, Fred Williams on Artis Mont Rose.

Mare or Gelding, Ridden by Lady; 50% for Riding and 50% for Horse—First, Mr. and Mrs. O. J. Mooers on Princess Charming; second, Wm. Daniels on Brother Mack; third, Ed P. Uhrich on Geo. McDonald; fourth, Blades & Hollman on Maxine.

Stallion, Mare or Gelding, Any Age, Five Gaited—First, Miss Loula Long on Kentucky's Best, 5664; second, Blades & Hollman on Johnny Jones; third, Houchin & Anderson on Nickel Plate; fourth, E. D. Moore on Diamond McDonald; fifth, Mr. and Mrs. O. J. Mooers on Helen Idlewood.

Stallion, Mare or Gelding, Any Age, Three Gaited—First, Miss Loula Long on Nancy Garland; second, Houchin & Anderson on Pauline Moore; third, Blades & Hollman on Maxine; fourth, Mr. and Mrs. O. J. Mooers on Princess Charming; fifth, C. E. Monahan on Montgomery, 2787.

COMBINED HARNESS AND SADDLE HORSES.

Stallion, Mare or Gelding, Any Age, Five Gaited—First, Loula Long on Kentucky's Best; second, Blades and Hollman on Johnny Jones; third, Houchin & Anderson on Nickle Plate; fourth, E. D. Moore, on Diamond McDonald; fifth, Mr. and Mrs. O. J. Mooens, on Helen Idlewood.

Stallion, Mare or Gelding, Any Age, Three Gaited—First, Loula Long on Nancy Garland; second, Houchin & Anderson. on Pauline Moore; third, Blades & Hollman on Maxine; fourth, Mr. and Mrs. O. J. Mooers on Princess Charming; fifth, C. E. Monahan on Montgomery.

HIGH SCHOOL HORSES.

Stallion, Mare or Gelding, Any Age—First, Hamilton Bros. on Topsy McDonald; second Ed P. Uhrich on Daisy Lee; third, Hamilton Bros. on Miss Fidelity; fourth, Bruce Robinson on Duke; fifth, Fred Williams on Artis Mont Rose.

Mare or Gelding, Three Years or Over—First, Hamilton Bros. on Major; second, Hamilton Bros. on Raven H.; third, B. F. Redman on Francis Highlander, 10718; fourth, Hamilton Bros. on Thomas A.

Stallion Three Years or Over—First, Hamilton Bros. on Art Bonta, 2267; second, Bruce Robinson on Kentucky's Champ Clark, 5602; third, Hamilton Bros. on Fitz Boy, 4482; fourth, C. E. Monahan on Montgomery, 2787.

$1,000 SADDLE HORSE STAKE.

Stallion Mare or Gelding, Any Age—First, Houchin & Anderson on Astral King; second, Miss Loula Long on Kentucky's Best, 5664; third, Paul Brown on Johnny Jones; fourth, Loula Long on Maurine Fisher, 10882; fifth, E. D. Moore on Miss Cliff; sixth, E. D. Moore on Majestic McDonald, 6811; seventh, Hamilton Bros. on Art Bonta, 2267; eighth, Mr. and Mrs. O. J. Mooers on Lawrence Barrett.

SPECIAL PRIZE OFFERED BY THE AMERICAN SADDLE HORSE BREEDERS' ASSOCIATION.

Stallion or Mare, Three Years Old or Under to Be Shown to Hand—Bruce Robinson on Kentucky's Champ Clark, 5602.

HUNTERS AND HIGH JUMPERS.

EXHIBITORS.

Chas. E. Bunn, Peoria, Ill.; Wm. Daniel, Chicago, Ill.; Walter C. DeBrock, Chicago, Ill.; George A. Heyl, Washington, Ill.; Geo. E. Perkins, Burlington; George J. Peak, Winchester, Ill.; H. Rasmussen, Chicago, Ill.; Wm. C. Seipp, Chicago, Ill.

JUDGE......................GEO. W. PEPPER, Toronto, Canada.

AWARDS.

Light Weight Hunters, Carrying up to 150 Pounds—First, H. Rasmussen on Alston; second, Chas. E. Perkins on Loma Palom; third, Wm. Seipp on Cobourg Boy, 68160.

Middle Weight Hunters, Carrying up to 175 Pounds—First, Chas. E. Perkins on Manzanita; second, Wm. Daniel on Brother Mack; third, H. Rasmussen on Sir Morris; fourth, Bruce Robinson on Game Major.

Heavy Weight Hunters, Carrying Over 200 Pounds—First, Wm. Daniel on Shamrock; second, Chas. E. Perkins on Humbug; third, Wm. Seipp on Fortunate Youth.

Ponies 13 to 14 Hands Over Jumps 3 ft. 6 to 4 ft. High or Over—First, Bruce Robinson on Duke.

Ponies Under 13 Hands Over Jumps 3 ft. 6 to 4 ft. High or Over—First, Chas. E. Bunn on Oak Lassie.

Champion Pony Jumper—Bruce Robinson on Duke.

Steeple Chase Race, Open to Heavy Weight Hunters or Thoroughbreds—First, Chas. E. Perkins on Humbug; second, Wm. G. Seipp on Fortunate Youth.

Steeple Chase Race, Open to Medium Weight Hunters or Thoroughbreds—First, Chas. E. Perkins on Manzanita; second, H. Rasmussen on Sir Morris.

Steeple Chase Race, Open to Heavy and Medium Weight Hunters or Thoroughbreds—First, Chas. E. Perkins on Humbug; second, H. Rasmussen on Sir Morris; third, Wm. C. Seipp on Fortunate Youth.

Steeple Chase Race, Open to Light Weight Hunters and Ponies—First, Wm. C. Seipp on Cobourg Boy; second, H. Rasmussen on Sir Morris; third, Chas. E. Perkins on Loma Palom.

Free For All Steeple Chase Race—First, Wm. Seipp on Cobourg Boy, 68160; second, H. Rasmussen on Sir Morris; third, Chas. E. Perkins on Humbug; fourth, Chas. E. Perkins on Loma Palom.

High Jump—First, H. Rasmussen on Alston; second, H. Rasmussen on Sir Morris.

Lady's Hunter, Ridden by Lady—First, H. Rasmussen on Alston; second, Wm. Daniel on Shamrock; third, H. Rasmussen on Sir Morris; fourth, E. A. Elliott on Brother Mack.

Champion Hunter, Open to All—First, Wm. Daniel on Shamrock; second, H. Rasmussen on Alston.

MILITARY HORSES.

EXHIBITORS.

Thos. Bass, Mexico, Mo.; J. C. Brunk, Springfield, Ill.; Robert Barnes, Oskaloosa; Blades & Hollman, Holliday, Mo.; Wm. Daniel, Chicago, Ill.; Hamilton Bros., Keota; Hawthorn Farm, Lake county, Illinois; Loula Long, Kansas City, Mo.; E. D. Moore, Columbia, Mo.; Morgan Horse Farm, Plainfield; C. E. Monahan, Des Moines; Geo. J. Peak, Winster, Ill.; Wm. M. Ridge, Shelbina, Mo.; Bruce Robinson, Riverside; Fred Williams, Barnes City.

JUDGE......................JAS. RUSH LINCOLN, Ames, Iowa.

AWARDS.

Gelding Suitable for Officer's Mount—First, Wm. Daniel on Brother Mack; second, E. D. Moore on Diamond McDonald; third, Hamilton Bros. on Major; fourth, Blades & Hollman on The Gambler.

Stallion Suitable to Sire Cavalry Remounts to Be Shown in Hand—First, E. D. Moore on Majestic McDonald, 6811; second, Hamilton Bros. on Fitz Boy; third, Hawthorn Farm on Tollington; fourth, J. C. Brunk on Red Ethan.

STANDARD BRED TROTTERS.

EXHIBITORS.

Horace L. Anderson, Des Moines; Thos. Bass, Mexico, Mo.; Chas. G. Colbert, Menlo; Ed Crawford, Des Moines; E. A. Elliott, Des Moines; Houchin

& Anderson, Jefferson City, Mo.; Mr. and Mrs. O. J. Mooers, Columbia, Mo.; J. D. McCarthy, Ames; George J. Peak, Winchester, Ill.; Bruce Robinson, Riverside; Ed P. Uhrich, Kansas City, Kan.; C. W. Wolford, Des Moines.

JUDGE........................WALTER PALMER, Ottawa, Ill.

AWARDS.

Stallion Four Years or Over—First, Geo. J. Peak on Tommy Doyle; second, Geo. J. Peak on Gaitwood; third, E. A. Elliott on Pickles.

Stallion Over Three, Under Four—First, Ed Crawford on Jappylac, 59402; second, J. D. McCarthy on Crookston, 55894.

Stallion Over Two, Under Three—First, Geo. J. Peak on Golden Grain; second, H. L. Anderson on De Antler; third, Ed Crawford on Pacwa; fourth, Geo. J. Peak on Tommy Peak.

Stallion Over One, Under Two—First, E. A. Elliott on E. A. E.; second, Chas. G. Colbert on Farmer Burns, 59909; third, Geo. J. Peak on Franklin J.

Stallion Foal—First, E. A. Elliott on Chestnut E.; second, E. A. Elliott on G. P. E.

Yeld Mare Four Years or Over—First, Geo. J. Peak on Countess Maid; second, Ed P. Uhrich on Stevie C.; third, Horace L. Anderson on Winnie Blake; fourth, Geo. J. Peak on Duke's Lassie.

Filly Over Three, Under Four—First, Geo. J. Peak on Lucy, Vol. 21.

Filly Over Two, Under Three—First, Geo. J. Peak on Barness Creator, Vol. 21.

Filly Over One, Under Two—First, Ed Crawford on Lily Hail; second, Geo. J. Peak on Lena C., Vol. 21.

Mare Foal—First, E. A. Elliott on Lola E.; second, E. A. Elliott on Jennie E.; third, C. W. Wolford.

Mare and Foal, Mare to Count 50%, Foal 50%—First, E. A. Elliott; second, E. A. Elliott; third, C. W. Wolford.

Champion Stallion—First, Geo. J. Peak on Tommy Doyle; second, Geo. J. Peak on Golden Grain.

Champion Mare—First, Geo. J. Peak on Countess Maid; second, Geo. J. Peak on Baroness Creator.

Get of Stallion—First, Geo. J. Peak; second, Geo. J. Peak.

Produce of Mare—First, Geo. J. Peak; second, Geo. J. Peak; third, Ed Crawford; fourth, E. A. Elliott.

Grand Display—First, Geo. J. Peak.

AMERICAN CARRIAGE HORSES.

EXHIBITORS.

Horace L. Anderson, Des Moines; C. T. Ayres & Son, Osceola; Thos. Bass, Mexico, Mo.; J. B. Baker, Waverly; J. C. Brunk, Springfield, Ill.; Blades & Hollman, Holliday, Mo.; Chas. G. Colbert, Menlo; E. A. Elliott, Des Moines; Hamilton Bros., Keota; Houchin & Anderson, Jefferson City, Mo.; Loula Long, Kansas City, Mo.; Mr. and Mrs. O. J. Mooers, Columbia, Mo.; C. E. Monahan, Des Moines; Morgan Horse Farm, Plainfield; E. D. Moore, Columbia, Mo.; Geo. J. Peak, Winchester, Ill.; B. F. Redman, Oskaloosa; Ed P. Uhrich, Kansas City, Kan.; O. W. Wolford, Des Moines; Ed Crawford, Des Moines.

JUDGE..........................WALTER PALMER, Otawa, Ill.

AWARDS.

Stallion Four Years or Over—First, Loula Long on Kentucky's Best, 5664; second, Geo. J. Peak on Tommy Doyle, 50261; third, Mr. and Mrs. O. J. Mooers on Advance Guard; fourth, E. D. Moore on Majestic McDonald.

Stallion Over Three, Under Four—First, E. D. Moore on Ben Rex; second, Horace L. Anderson on J. W. A.

Stallion Over Two, Under Three—First, Miss Loula Long on Garrard Hunt, 6127; second, E. D. Moore on Comedian, 6000; third, J. C. Brunk on Sentiment; fourth, Geo. J. Peak on Golden Grain 5847.

Stallion Over One, Under Two—First, E. D. Moore on Battle; second, E. A. Elliott on E. A. E., 59809; third, J. B. Baker on Foxy J., Vol. 4; fourth, Chas. G. Colbert on Farmer Burns, 59909.

Stallion with Three of His Get of Either Sex—First, Geo. J. Peak on Tommy Doyle, 50261; second, Morgan Horse Farm; third, E. A. Elliott.

Yeld Mare Four Years or Over—First, Geo. J. Peak on Countess Maid; second, Houchin & Anderson on Hastings Girl; third, Ed P. Uhrich on Daisy Lee; fourth, J. C. Brunk on Ruby.

Filly Over Three, Under Four—First, Blades & Hollman on My Idol; second, Geo. J. Peak on Lucy, Vol. 21; third, E. D. Moore on Eloise Thornton.

Filly Over Two, Under Three—First, Blades & Hollman on Butterfly Dare; second, Geo. J. Peak on Baroness Creator, Vol. 21; third, Miss Loula Long on Virginia Mayla, 10207; fourth, J. C. Brunk.

Filly Over One, Under Two—First, Hamilton Bros. on Merry Maid, 11623; second, Geo. J. Peak on Lena C., Vol. 21; third, Ed Crawford on Lily Hail.

Stallion or Mare Foal—First, Morgan Horse Farm on Polly Taylor, Vol. 4; second, E. A. Elliott on G. P. E.; third, C. T. Ayres & Son on Dr. Kane; fourth, C. T. Ayres & Son on Nelly Kane.

Champion Stallion—Miss Loula Long on Garrard Hunt, 6127; reserve, Horace L. Anderson on J. W. A.

Champion Mare—Geo. J. Peak on Countess Maid; reserve, Blades & Hollman on My Idol.

MORGAN.

EXHIBITORS.

C. T. Ayres & Son, Osceola; J. B. Baker, Waverly; J. C. Brunk, Springfield, Ill.; Morgan Horse Farm, Plainfield; Bruce Robinson, Riverside.

JUDGES......................W. A. DOBSON, Des Moines, Iowa.
ARTHUR G. LEONARD, Chicago, Ill.
THOS. E. WILSON, Chicago, Ill.

AWARDS.

Stallion Four Years or Over—First, J. C. Brunk on Allen F, 5722; second, Morgan Horse Farm on Dart, 5130; third, J. C. Brunk on Red Ethan, 6638; fourth, C. T. Ayres & Son on Morgan Star, 6891.

Stallion Three Years and Under Four—First, Morgan Horse Farm on Montgomery, 6684; second, J. C. Brunk on Toronto.

Stallion Two Years and Under Three—First, J. C. Brunk on Sentiment; second, J. B. Baker, on Buster M., Vol. 4; third, Bruce Robinson on Ayres Morgan, 6892.

Stallion Over One Year and Under Two—First, J. B. Baker on Foxy J; second, J. C. Brunk on Mohawk.

Stallion or Mare Foal—First, Morgan Horse Farm on Polly Taylor, Vol. 4; second, C. T. Ayres & Son on Nellie Kane; third, Morgan Horse Farm on Archy L, Vol. 4; fourth, J. C. Brunk on Red Ruby.

Yeld Mare Four Years or Over—First, J. C. Brunk on Ruby.

Mare Over Three and Under Four—First, J. B. Baker on Maud Baker, Vol. 3; second, J. C. Brunk on Mrs. Lewis.

Filly Over Two and Under Three—First, Morgan Horse Farm on Myrtle, Vol. 4; second, Morgan Horse Farm on Mabel, Vol. 4.

Champion Stallion—J. C. Brunk on Sentiment; reserve, Morgan Horse Farm on Montgomery, 6684.

Champion Mare—J. C. Brunk on Ruby; reserve, Morgan Horse Farm on Polly Taylor.

Get of Stallion—First, Morgan Horse Farm; second, J. B. Baker.

Grand Display—First, J. C. Brunk.

SPECIAL PREMIUM OFFERED BY THE MORGAN HORSE CLUB.

Stallion, Mare or Gelding Conforming Most Truly to the Ancient Morgan Type—J. C. Brunk on Allen F.

HACKNEY.

EXHIBITORS.

Thos. Bass, Mexico, Mo.; Chas. E. Bunn, Peoria, Ill.; Crawford & Griffin, Newton; A. L. Champlin, Ames; Fred S. Castle, Joy, Ill.; Hawthorn Farm, Lake county, Illinois; Geo. A. Heyl, Washington, Ill.; Mr. and Mrs. O. J. Mooers, Columbia, Mo.

JUDGE......................GEO. W. PEPPER, Toronto, Canada.

AWARDS.

Stallion Four Years or Over—First, Hawthorn Farm on Tollington (10464); second, A. L. Champlin on Imp. Prince of Green Hill, 11347.

Stallion Over Three, Under Four—First, Chas. E. Bunn on Quoboris, 6796.

Yeld Mare Four Years or Over—First, A. L. Champlin on Fair Eliza, 19061.

Mare Over Three, Under Four—First, Mr. and Mrs. O. J. Mooers on Osogay; second, Chas. E. Bunn on Quick Silver, 6784.

Filly Over Two, Under Three—First, Chas. E. Bunn on Dinarth Bounce.

Champion Stallion—First, Hawthorn Farm on Tollington (10464).

Champion Mare—First, Mr. and Mrs. O. J. Mooers on Osogay; second, A. L. Champlin on Fair Eliza, 19061.

Get of Stallion—First, Chas. E. Bunn.

Grand Display—First, Chas. E. Bunn.

SPECIAL PRIZES OFFERED BY THE AMERICAN HACKNEY HORSE SOCIETY.

Champion Stallion—First, Hawthorn Farm on Tollington (10464).

Champion Mare—First, Mr. and Mrs. O. J. Mooers on Osogay; second, A. L. Champlin on Fair Eliza, 19061.

WELSH PONIES.

EXHIBITORS.

Chas. E. Bunn, Peoria, Ill.; Helen Curtiss, Ames; George A. Heyl, Washington, Ill.; H. M. & R. M. Jones, Des Moines; W. T. Roberts, Ames; C. F. Stewart, Des Moines; Mrs. Adam Stirling, Des Moines; J. C. Thompson & Sons, Jamaica.

JUDGES......................GEO. W. PEPPER, Toronto, Canada.
W. A. DOBSON, Des Moines, Iowa.

AWARDS.

Stallion Four Years or Over—First, Geo. A. Heyl on Llewyn King, 424; second, Geo. A. Heyl on Gwindy Duke, 586; third, Geo. A. Heyl on Elewyn Emperor.

Stallion Three Years, Under Four—First, Mrs. Adam Stirling on Rob Roy; second, Chas. E. Bunn on Llewyn Master, 491.

Stallion Two Years, Under Three—First, Geo. A. Heyl on Gwindy True Blue, 546.

Stallion or Mare Foal—First, Mrs. Adam Stirling; second, Helen Curtiss on Prince of Wales; third, Mrs. Adam Stirling; fourth, Chas. E. Bunn on Bell of the Welsh.

Mare Four Years or Over—First, Chas E. Bunn on Dinarth Roany; second, Chas. E. Bunn on Princess Nell, 477; third, Mrs. Adam Stirling on Rosebud, 89; fourth, C. F. Stewart on Dinarth Sparkler; fifth, Chas. E. Bunn on Windy Bird, 478; sixth, Mrs. Adam Stirling on Fickle 208; seventh, Geo. A. Heyl & Son on Llewyn Bracelet, 428.

Mare Three Years, Under Four—First, Geo. A. Heyl on Llewyn Peggy, 482; second, Mrs. Adam Stirling on Myrtle, 446; third, Chas. E. Bunn on Forest Dandy Toll, 500; fourth, Mrs. Adam Stirling on Grand Duchess.

Mare Two Years, Under Three—First, Geo. A. Heyl & Son on Gwindy Blossom, 587; second, Mrs. Adam Stirling on Coquette, 556; third, Mrs. Adam Stirling on Bracelet, 561.

Gelding or Mare in Harness—First, Chas. E. Bunn on Dinarth Roany; second, Mrs. Adam Stirling on Fickle; third, Mrs. Adam Stirling on Rosebud; fourth, C. F. Stewart on Dinarth Sparkler.

Pair Ponies in Harness—First, Chas. E. Bunn on Dinarth Roany and Bess; second, Chas. E. Bunn on Bird and Nell; third, Mrs. Adam Stirling on King and Emperor; fourth, Geo. A. Heyl on Rosebud and Rob Roy.

Tandem Team—First, Mrs. Adam Stirling; second and third, Chas. E. Bunn.

Pony Under Saddle—First, Helen Curtiss on Black Beauty; second, Chas. E. Bunn on Bess; third, Mrs. Adam Stirling on Duchess; fourth, W. T. Roberts on Mystic.

Four-in-Hand—First, Chas. E. Bunn; second, Geo. A. Heyl & Son.

Champion Stallion, Mare or Gelding in Harness—First, Chas. E. Bunn on Dinarth Roany; second, Mrs. Adam Stirling on Rob Roy.

SHETLAND PONIES.

EXHIBITORS.

Chas. E. Bachman, Des Moines; Reed Bridgeford, Joy, Ill.; Chas. E. Bunn, Peoria, Ill.; George Briedson, Bayard; John Donhowe, Story City; H. C. Davis, Ames; J. U. Hainline, Orient; Harry Brothers, Des Moines; Geo. A. Heyl & Son, Washington, Ill.; H. H. & R. M. Jones, Des Moines; Mrs. C. D. Knight, Ames; W. T. Roberts, Ames; Mrs. Adam Stirling, Des Moines; J. C. Thompson & Son, Jamaica; R. E. West, Altoona; F. R. Wilson, Colo; Welty & Stewart, Nevada and Des Moines.

JUDGE......................W. A. DOBSON, Des Moines, Iowa.

AWARDS.

Stallion Four Years or Over—First, Geo. A. Heyl & Son on King Larigo; second, Chas. E. Bunn on Grandee; third, Chas. E. Bunn on Locust, 11567; fourth, Welty & Stewart on Perfect Harum, 6481; fifth, John Donhowe on Dermote.

Stallion Three Years, Under Four—First, Geo. A. Heyl & Son on Don Larigo; second, Chas. E. Bunn on Onion, 13598; third, Harry Brothers on Quickse, 12123; fourth, W. T. Roberts on Kimple, 13013.

Stallion Two Years, Under Three—First, Chas. E. Bunn on Happy Hooligan, 12788; second, Geo. A. Heyl & Son on Sensational Larigo, 15185; third, Mrs. Adam Stirling on Lord Bobbs, 14105; fourth, H. M. & R. M. Jones on Tom Pollock, 13713; fifth, F. R. Wilson on Sparkle, 12985.

Stallion Over One, Under Two—First, Chas. E. Bunn on Spruce, 1493; second, Reed Bridgeford on Demaree B, 15020; third, Geo. A. Heyl & Son on Larigo's Perfection, 14946; fourth, Welty & Stewart on Sharp Kennedy.

Stallion or Mare Foal—First, Mrs. Adam Stirling; second, John Donhowe on Beauty Spot; third, H. M. & R. M. Jones on Waggalia; fourth, J. C. Thompson & Son on Rob Roy; fifth, F. R. Wilson on Snip.

Mare Four Years or Over—First, Geo. Heyl & Son on Pearl, 8779; second, Stewart & Welty on Mack's Princess, 9940; third, Chas. E. Bunn on Ovilta, 10620; fourth, Mrs. Adam Stirling on Clara 2nd, 11935.

Mare Three Years, Under Four—First, Chas. E. Bunn on Promised Luck, 12738; second, Mrs. Adam Stirling on Daffodil; third, Chas. E. Bunn on Quality, 12832; fourth, Welty & Stewart on Kilkateen Nell, 12384.

Mare Over Two, Under Three—First, Chas. E. Bunn on Quapho, 14346; second, Chas. E. Bunn on Flying Seal, 13509; third, Reed Bridgeford on Esther Bridgford, 13640; fourth, Mrs. Adam Stirling on Belle of Edinbrae, 14476.

Mare Over One, Under Two—First, Mrs. Adam Stirling on Countess, 14480; second, Geo. A. Heyl & Son on Orvetta Larigo, 14952; third, Chas. E. Bunn on Sazelle, 13974; fourth, Welty & Stewart on Queen Larigo.

Gelding or Mare in Harness—First, Chas. E. Bunn on Ovilta, 10620; second, Geo. A. Heyl & Son on Pearl; third, Geo. A. Heyl & Son on Pricilla; fourth, Chas. E. Bunn on Quapho, 14346.

Pair Ponies in Harness—First, Chas. E. Bunn on Grandie and Ovilta; second, Geo. A. Heyl & Son on King Larigo and Pearl; third, Mrs. Adam Stirling on Truant and Alford; fourth, Welty & Stewart on Mack's Princess and Lady Starlight.

Four-in-Hand—First, Geo. A. Heyl & Son; second, Chas. E. Bunn; third, Welty & Stewart; fourth, Mrs. Adam Stirling.

Tandem Team—First, Geo. A. Heyl & Son on King Larigo and Pearl; second, Chas. E. Bunn on Locust and Ozella; third, Chas. E. Bunn on Grandie and Ovilta; fourth, B. B. Welty and C. F. Stewart on Joyful and Lord Kennedy.

Pony Under Saddle—First, C. E. Backman on Dimple; second, C. E. Backman on Prince; third, John Donhowe; fourth, Mrs. C. D. Knight on Flossie.

Four Colts, Get of One Sire—First, Mrs. Adam Stirling; second, Reed Bridgeford; third, Geo. A. Heyl & Son; fourth, Chas. E. Bunn.

Champion Stallion, Mare or Gelding in Harness—First, Geo. A. Heyl & Son on King Larigo, 8778; second, Chas. E. Bunn on Grandee, 4423.

Grand Display—First, Chas. E. Bunn; second, Geo. A. Heyl & Son; third, Mrs. Adam Stirling; fourth, John Donhowe.

Pony in Harness—First, B. B. Welty & C. F. Stewart; second, Mrs. Adam Stirling; third, H. M. & R. M. Jones; fourth, Mrs. C. D. Knight.

Pair Ponies in Harness—First, Mrs. Adam Stirling on Truant and Alford; second, Mrs. C. D. Knight on Anton and Dunmore; third, Welty and Stewart on Perfect Harum and Queen of Flett; fourth, Welty & Stewart on Joyful and Lord Kennedy.

Pony Under Saddle—First, C. E. Bachman on Dimple; second, C. E. Bachman on Prince; third, John Donhowe on Dermote; fourth, Mrs. C. D. Knight on Flossie.

HACKNEY PONIES AND OTHERS.

EXHIBITORS.

Thos. Bass, Mexico, Mo.; George Briedson, Bayard; Chas. E. Bunn, Peoria, Ill.; H. C. Davis, Ames; John Donhowe, Story City; George A. Heyl, Washington, Ill.; Mrs. C. D. Knight, Ames; Mrs. Adam Stirling, Des Moines; J. C. Thompson, Jamaica; F. R. Wilson, Colo.

JUDGES......................GEORGE W. PEPPER, Toronto, Canada.
W. A. DOBSON, Des Moines, Iowa.

AWARDS.

..*Stallion Three Years or Over*—First, Chas. E. Bunn on Fire Lad; second, Chas. E. Bunn on Quoboris; third, Chas. E. Bunn on Quartz.

Mare Three Years or Over—First, Geo. A. Heyl & Son on Dinarth Dot; second, Geo. A. Heyl & Son on Dinarth Gem; third, Chas. E. Bunn on Quick Silver.

Pony in Harness—First, Chas. E. Bunn on Fire Lad; second, Geo. A. Heyl on Dinarth Gem; third, Mrs. Adam Stirling.

Pony Under Saddle—First, John Donhowe on Daisy; second, Chas. E. Bunn on Orient; third, F. R. Wilson on Dewey.

Pair Ponies in Harness—First, Geo. A. Heyl & Son; second, Chas. E. Bunn; third, Chas. E. Bunn.

Tandem Team—First, Geo. A. Heyl & Son; second, Chas. E. Bunn; third, F. R. Wilson.

Four-in-Hand—First, Chas. E. Bunn; second, H. C. Davis.

MULES.

EXHIBITORS.

F. L. Hutson & Son, State Center; Midge Marshall, Moberly, Mo.; A. L. Russell, Arbella, Mo.

JUDGE.........................W. J. KENNEDY, Ames, Iowa.

AWARDS.

Mule Four Years or Over—First, Midge Marshall on Missouri Queen; second, Midge Marshall on Susie; third, F. L. Hutson & Son on Jennie; fourth, F. L. Hutson & Son on Sis.

Mule Over Three, Under Four—First F. L. Hutson & Son on Daisy; second, F. L. Hutson & Son on Nina; third, F. L. Hutson & Son on Lizzie.

Mule Over Two, Under Three—First, F. L. Hutson & Son on Mary; second, F. L. Hutson & Son on Maud.

Mule Over One, Under Two—First, F. L. Hutson & Son on Beck; second, F. L. Hutson & Son on Kate.

Mine Mule Under 15 Hands—First, F. L. Hutson & Son on Lizzie; second, F. L. Hutson & Son on Mabel.

Pair Mules Over 2,400 Pounds, to be Shown in Harness—First, Midge Marshall on Queen and Susie; second, F. L. Hutson & Son on Sis and Jennie; third, F. L. Hutson & Son on Queen and Jim.

Pair Mules Under 2,400 Pounds, to Be Shown in Harness—First, F. L. Hutson & Son.

Five Mules, Any Age—First and second, F. L. Hutson & Son.

Champion Mule, Any Age—First, Midge Marshall on Missouri Queen; second, Midge Marshall on Susie.

Champion Pair of Mules, Any Age—First, Midge Marshall on Missouri Queen and Susie; second, F. L. Hutson on Sis and Jennie.

HORSE SHOEING CONTEST.

JUDGES.......................R. B. OGILVIE, Chicago, Ill.
DR. JACK SEITER, Libertyville, Ill.

AWARDS.

Horse Shoeing Contest—First, Wm. Campbell, Rock Rapids; second, C. E. Wickland, Marshalltown; third, Ben Wolgar, Altoona; fourth, H. C. Cameron, Ames; fifth, Wm. S. Montis, Des Moines.

CATTLE DEPARTMENT.

SUPERINTENDENT..................H. L. PIKE, Whiting, Iowa.

SHORT-HORN.

EXHIBITORS.

Anoka Farms, Waukesha, Wis.; C. S. Bratt, Arapahoe, Neb.; R. E. Baldwin, Osceola, Iowa; Bellows Bros., Maryville, Mo.; G. H. Burge, Mount Vernon, Iowa; S. G. Eliason, Montevideo, Minn.; A. L. Grimm, Zearing, Iowa; W. E. Graham & Son, Prairie City, Iowa; C. B. Grimes, Winnebago, Minn.; Wm. Herkelmann, Elwood, Iowa; Herr Bros. & Reynolds, Lodi, Wis.; J. A. Kilgour, Sterling, Ill.; Lakewood Farm, Rock Rapids, Iowa; C. L. McClellan, Louden, Iowa; Joseph Miller & Son, Granger, Mo.; H. Pritchard & Son, Walnut, Iowa; Rapp Bros., St. Edwards, Neb.; H. Rees & Sons, Pilger, Neb.; Wm. M. Smith & Sons, West Branch, Iowa; C. A. Saunders, Manilla, Iowa; Frank Toyne, Lanesboro, Iowa; E. B. Thomas, Audubon, Iowa; Uppermill Farm, Wapello, Iowa; W. A. Wickersheim, Melbourne, Iowa; R. E. Watts & Sons, Miles, Iowa; G. D. Westrope & Son, Harlan, Iowa.

JUDGE.........................LESLIE SMITH, St. Cloud, Minn.

AWARDS.

Bull Three Years or Over—First, H. Rees & Sons on Whitehall Rosedale. 320004; second, Anoka Farms on Village Denmark, 334439; third, Uppermill Farm on Sultans Last, 363468; fourth, Lakewood Farm on Fair Knight, 2nd, 350285; fifth, B. H. Ahrenholtz on Lord Cumberland, 3rd, 353218; sixth, Wm. Herkelmann on True Cumberland, 3rd, 353220; seventh, R. E. Watts & Sons on Sultan Calculator, 334973.

Bull Two Years and Under Three—First, J. G. Westrope & Son on Scottish Rex, 370101; second, Wm. M. Smith & Sons on Victoria Favorite, 3rd.

Bull Senior Yearling—First, C. A. Saunders on Cumberland's Type, 388132; second, J. A. Kilgour on Fair Acres Gloster, 385760; third, C. A. Saunders on

Cumberland Again, 388131; fourth, Bellows Bros. on Superior Goods, 398194; fifth, J. G. Westrope & Son on Pine Valley Rex; sixth, S. G. Eliason on Bishop, 385327; seventh, Wm. M. Smith & Sons on Scottish Lord, 3rd.

Bull Junior Yearling—First, Herr Bros. & Reynolds on Royal Choice, 392788; second, Uppermill Farm on Village Victor, 387932; third, Anoka Farms on Regal Stamp, 396730; fourth, G. H. Burge on Perfection; fifth, H. Rees & Son on Village Premier; sixth, Uppermill Farm on Uppermill Sultan, 39170; seventh, C. L. McClelland on Gainford Champion, 91262.

Bull Senior Calf—First, Uppermill Farm on Uppermill Lord, 391777; second, Jos. Miller & Sons on Choice Cumberland; third, S. G. Eliason on Bobby Burns, 400997; fourth, Bellows Bros. on Parkdale Baron, 396731; fifth, Anoka Farms on Venus Sultan, 396731; sixth, J. A. Kilgour on Color Guard; seventh, W. E. Graham & Son on Champion Mysie, 408008.

Bull Junior Calf—First, Uppermill Farm on Sultan's Coronet; second, Anoka Farms on Augusta Sultan, 402628; third, Anoka Farms on Crystal Stam, 402621; fourth, C. A. Saunders on Sultan Cumberland; fifth, Herr Bros. & Reynolds on Double Sultan; sixth, Rapp Bros. on Village Sultan; seventh, Rapp Bros. on Village King.

Cow Three Years or Over—First, Wm. Herkelmann on Mildred of Oakland, 101856; second, C. B. Grimes on Roan Hellen, 13471; third, Anoka Farms on Golden 5, 118839; fourth, J. G. Westrope & Son on Roan Lady, 109467; fifth, G. H. Burge on Missie of Wayside 2nd, Vol. 77; sixth, R. E. Baldwin on Violet, Vol. 68; seventh, E. B. Thomas on Lady Devergoil, 108829.

Heifer Two Years and Under Three—First, Anoka Farms on Lancaster Duchess 7th, 125860; second, Uppermill Farm on Village Flower 2nd, 127923; third, Wm. Herkelmann on Ruby Goods, 127874; fourth, H. Rees & Sons on Lovely Goods; fifth, S. G. Eliason on Matchless 4th, 133346; sixth, C. B. Grimes on British Countess, 126927; seventh, Lakewood Farm on Fair Minerva, 139202.

Heifer Senior Yearling—First, J. A. Kilgour on Proud Rose, 150343; second, G. H. Burge on Silver Mysie, 149735; third, Anoka Farms on Augusta, 112, 152321; fourth, S. G. Eliason on Sunshine 7th, 149104; fifth, H. Rees & Son on Lady Violet 6th; sixth, Bellows Bros. on Queen of Beauty 28th, 164502; seventh, C. A. Saunders on Goldie Cumberland.

Heifer Junior Yearling—First, J. A. Kilgour on Fair Acres Nell, 150334; second, Anoka Farms on Anoka Ross, 156246; third, G. H. Burge on Orange Flower 3rd, 149734; fourth, Herr Bros. & Reynolds on Queen Avenue, 151896; Wm. Herkelmann on Good Princess, 152455; sixth, Rapp Bros. on Bonnie Bell; seventh, W. E. Graham & Son on Scotch Lady, 149055.

Heifer Senior Calf—First, C. A. Saunders on Gipsey Cumberland 3rd, 166289; second, C. A. Saunders on Gladsome Cumberland, 166789; third, H. Rees & Son on Lady Violet 7th; fourth, Bellows Bros. on Lovely of Parkdale 12th; fifth, S. G. Eliason on Dairsie Lass 3rd, 176325; sixth, Uppermill Farm on Village Queen 2nd; seventh, J. A. Kilgour on Bonnie Belle.

Heifer Junior Calf—First, Herr Bros. & Reynolds on Cumberland Lass 14th; second, Rapp Bros. on Trueby Allen; third, Anoka Farms on Moss Rose 42nd; fourth, Bellows Bros. on Diamond Emma; fifth, Anoka Farms on Princess Royal, 172672; sixth, Uppermill Farm on Village Clara 5th; seventh, Uppermill Farm on Village Baroness 2nd.

Champion Bull Two Years or Over—H. Rees & Sons on Whitehall Rosedale, 320004.

Champion Bull Under Two Years Old—C. A. Saunders on Cumberland's Type, 388132.

Champion Cow Two Years Old or Over—Anoka Farms on Lancaster Duchess 7th, 125860.

Champion Heifer Under Two Years Old—J. A. Kilgour on Fair Acres Nell, 150334.

Grand Champion Bull, Any Age—C. A. Saunders on Cumberland's Type, 388132.

Grand Champion Shorthorn Bull, Cumberland's Type, owned by C. A. Saunders, Manilla, Iowa.

Grand Champion Shorthorn Cow, Lancaster Duchess 7th, owned by Anoka Farms, Waukesha, Wisconsin.

Grand Champion Cow or Heifer, Any Age—Anoka Farms on Lancaster Duchess 7th, 125860.

Graded Herd—First, Anoka Farms; second, H. Rees & Son; third, Uppermill Farm; fourth, Wm. Herkelmann; fifth, Lakewood Farm; sixth, J. G. Westrope & Son.

Breeders' Young Herd—First, J. A. Kilgour; second, C. A. Saunders, third, Bellows Bros.; fourth, S. G. Eliason; fifth, Herr Bros. & Reynolds; sixth, Anoka Farms.

Breeders' Calf Herd—First, Bellows Bros.; second, C. A. Saunders; third, Herr Bros. & Reynolds; fourth, Anoka Farms, fifth, S. G. Eliason; sixth, Rapp Bros.

Get of Sire—First, C. A. Saunders; second, J. A. Kilgour; third, Uppermill Farm; fourth, Anoka Farms; fifth, S. G. Eliason; sixth, H. Rees & Sons.

Produce of Cow—First, C. A. Saunders; second, C. A. Saunders; third, S. G. Eliason; fourth, H. Rees & Son; fifth, Wm. Herkelmann; sixth, G. H. Burge.

IOWA SHORT-HORN SPECIALS.

Bull Three Years or Over—First, Uppermill Farm on Sultans Last, 363468; second, Lakewood Farm on Fair Knight 2nd, 350285; third, B. H. Ahrenholtz on Lord Cumberland, 353218; fourth, Wm. Herkelmann on True Cumberland 3rd, 353220; fifth, R. E. Watts & Son on Sultan Calculator, 334973; sixth, Frank Toyne on Royal Velvet, 355923; seventh, Wm. Herkelmann on Princely Sultan, 350513.

Bull Two Years, Under Three—First, J. G. Westrope & Son on Scottish Rex, 370101; second, Wm. M. Smith & Sons on Victoria Favorite 3rd.

Bull Senior Yearling—First, C. A. Saunders on Cumberland's Type, 388132; second, C. A. Saunders on Cumberland Again, 388131; third, J. G. Westrope & Son on Pine Valley Rex; fourth, Wm. M. Smith & Sons on Scottish Lord 3rd.

Bull Junior Yearling—First, Uppermill Farm on Village Victor, 387932; second, G. H. Burge on Perfection; third, Uppermill Farm on Uppermill Sultan, 391780; fourth, C. L. McClelland on Gainford Champion, 91262; fifth, Wm. Herkelmann on Roan Cumberland; sixth, C. L. McClelland on Missies Victor, 408262; seventh, G. H. Burge on Silver Beau.

Bull Senior Calf—First, Uppermill Farm on Uppermill Lord, 391777; second, W. E. Graham & Son on Champion Mysie, 408008; third, G. H. Burge on Master Mysie; fourth, Lakewood Farm on Fair Seal, 402614; fifth, W. E. Graham & Son on Champion's Goods, 408007; sixth, C. A. Saunders on Gloster Cumberland, 399387; seventh, E. B. Thomas on Elanwood Sultan.

Bull Junior Calf—First, Uppermill Farm on Sultan's Coronet; second, C. A. Saunders on Sultan Cumberland; third, C. A. Saunders on Bred Right, 401527; fourth, G. H. Burge on Winter King; fifth, J. G. Westrope & Son on Royal Fragrance; sixth, J. G. Westrope & Son on Rex Jr.; seventh, Wm. Herkelmann on Mildred's Ideal.

Cow Three Years or Over—First, Wm. Herkelmann on Mildred of Oakland, 101856; second, J. G. Westrope & Son on Roan Lady, 109467; third, G. H. Burge on Missie of Wayside 2nd, Vol. 77; fourth, R. E. Baldwin on Violet, Vol. 68; fifth, E. B. Thomas on Lady Devergoil, 108829; sixth, G. H. Burge on Lavender Rose, Vol. 64.

Heifer Two Years, Under Three—First, Uppermill Farm on Village Flower 2nd, 127923; second, Wm. Herkelmann on Ruby Goods, 127874; third, Lakewood Farm on Fair Minerva, 139202; fourth, J. G. Westrope on Lady Aberdeen; fifth, Frank Toyne on Village Lassie 2nd, 127925.

Heifer Senior Yearling—First, G. H. Burge on Silver Mysie, 149735; second, C. A. Saunders on Goldie Cumberland; third, Uppermill Farm on Golden Wreath 12th, 149293; fourth, Wm. Herkelmann on Missis 4th, 152456; fifth, G. H. Burge on Nonpareil Mint, 149733; sixth, Frank Toyne on Village Baroness 3rd, 152927.

Heifer Junior Yearling—First, G. H. Burge on Orange Flower 3rd, 149734; second, Wm. Herkelmann on Good Princess, 152455; third, W. E. Graham & Son on Scotch Lady, 149055; fourth, Lakewood Farm on Fair Beauty, 139199; fifth, C. A. Saunders on Laring Cumberland 3rd; sixth, E. B. Thomas on Victoria Rose; seventh, Lakewood Farm on Fair Mysie, 139203.

Heifer Senior Calf—First, C. A. Saunders on Gipsey Cumberland 3rd, 166289; second, C. A. Saunders on Gladsome Cumberland, 166789; third, Uppermill Farm on Village Queen 2nd; fourth, C. A. Saunders on Lady Cumberland 3rd; fifth, E. B. Thomas on Prudent Sultana; sixth, E. B. Thomas on Victoria Sultana.

Heifer Junior Calf—First, W. A. Wickersham on Village Clara 5th; second, Uppermill Farm on Village Baroness 2nd; third, Wm. Herkelmann on Mysie Maid 3rd; fourth, Lakewood Farm on Fair Crystal, 172742; fifth, Lakewood Farm on Fair Butterfly 2nd, 172741; sixth, Wm. Herkelmann on Sweet Victoria 2nd; seventh, J. A. Kilgour on Silver Nell.

Champion Bull Two Years or Over—Uppermill Farm on Sultan's Last, 363468.

Champion Bull Under Two Years Old—C. A. Saunders on Cumberland's Type, 388132.

Champion Cow Two Years Old or Over—Uppermill Farm on Village Flower 2nd, 127925.

Champion Heifer Under Two Years Old—C. A. Saunders on Gipsey Cumberland 3rd, 166289.

Grand Champion Bull, Any Age—C. A. Saunders on Cumberland's Type, 388132.

Grand Champion Cow or Heifer, Any Age—Uppermill Farm on Village Flower 2nd, 127925.

Graded Herd—First, Uppermill Farm; second, Wm. Herkelman; third, Lakewood Farm; fourth, J. G. Westrope; fifth, Frank Toyne.

Breeders' Young Herd—First, C. A. Saunders; second, G. H. Burge; third, Wm. Herkelman; fourth, Lakewood Farm; fifth, E. B. Thomas; sixth, J. G. Westrope.

Breeders' Calf Herd—First, C. A. Saunders; second, Wm. Herkelman; third, E. B. Thomas; fourth, J. G. Westrope; fifth, C. A. Saunders; sixth, Lakewood Farm.

Get of Sire—First, C. A. Saunders; second, Bellows Bros.; third, Wm. Herkelman; fourth, G. H. Burge; fifth, Lakewood Farm; sixth, E. B. Thomas.

Produce of Cow—First, C. A. Saunders; second, C. A. Saunders; third, Wm. Herkelman; fourth, G. H. Burge; fifth, E. B. Thomas; sixth, G. H. Burge.

HEREFORD.

EXHIBITORS.

Wm. Andrews & Sons, Morse, Iowa; Biehl & Sidwell, Queen City, Mo.; A. A. Berry & Son, Mount Vernon, Iowa; W. H. Campbell & Son, Grand River, Iowa; J. M. Curtice, Kansas City, Mo.; E. M. Cassady & Son, Whiting, Iowa; W. J. Davis, Jackson, Miss.; O. S. Gibbons & Son, Atlantic, Iowa; O. Harris & Son, Harris, Mo.; Mayne & Brazie, Harlan, Iowa; Warren T. McCray, Kentland, Ind.; B. F. Maiden & Son, Tama, Iowa; Parmelee & Pierson, Villisca, Iowa; J. C. Robinson & Son, Evansville, Wis.; Cyrus A. Tow, Norway, Iowa.

JUDGE......................PHIL C. LEE, San Angelo, Texas.

AWARDS.

Bull Three Years or Over—First, O. Harris & Sons on Prince Perfection, 342054; second, J. M. Curtice on Don Perfect, 400000; third, Warren T. McCray on Protector Fairfax, 361812; fourth, O. S. Gibbons & Son on Good Lad, 343996; fifth, Warren T. McCray on Farmer, 426279; sixth, Parmelee & Pierson on Beau Monde, 272726.

Bull Two Years and Under Three—First, O. Harris & Son on Repeater 7th, 386905; second, Warren T. McCray on Crusader Fairfax, 388813; third, W. J. Davis on LaVernet Prince 2nd, 393858; fourth, E. M. Cassady & Son on Golden Lad, 381477; fifth, J. C. Robinson on Maple Lad, 33rd, 397606; sixth, A. A. Berry & Son on Standard 4th, 382208; seventh, W. H. Campbell & Son on Polled Victor, 389779.

Bull Senior Yearling—First, W. J. Davis on Vernet King 4th, 415792; second, Warren T. McCray on Letham Fairfax, 414471; third, J. M. Curtice on Don Perfect 2nd, 464022; fourth, O. Harris & Son on Gay Lad 16th, 432192; fifth, O. Harris & Son on Gay Lad 18th, 412194; sixth, O. S. Gibbons & Son on Beau Mischievious 2nd, 445517; seventh, A. A. Berry & Son on Beaumont, 442469.

Bull Junior Yearling—First, Cyrus A. Tow on Disturber Jr., 424253; second, W. Andrews & Son on Bonnie Brae 60th, 413606; third, O. Harris & Son on Harris Standard 2nd, 424030; fourth, A. A. Berry & Son on Bonnie Gomez, 442473; fifth, Warren T. McCray on Superior Fairfax Jr., 425492; sixth, J. C. Robinson & Son on Maple's Lad 48th, 428979; seventh, J. M. Curtice on Don Perfect 1st, 464023.

Bull Senior Calf—First, W. J. Davis on Vernet Prince 18th, 452152; second, Warren T. McCray on Martin Fairfax, 449300; third, J. M. Curtice on Don Perfect 3rd, 464090; fourth, Cyrus A. Tow on Standard 22nd, 448718; fifth, Warren T. McCray on Owen Perfection, 449310; sixth, Warren T. McCray on Homer Fairfax, 449288; seventh, A. A. Berry & Son on Gomez Boatman, 447812.

Bull Junior Calf—First, Warren T. McCray on Ogden Fairfax, 449309; second, W. J. Davis on Vernet Prince 23rd, 461062; third, Cyrus A. Tow on Fairview Boy, 448708; fourth, J. M. Curtice on Don Perfect 5th, 464091; fifth, A. A. Berry & Son on Cedar Lad, 461631; sixth, Cyrus A. Tow on Standard 26th, 448722; seventh, E. M. Cassady & Son on Don Lee, 447950.

Cow Three Years or Over—First, Warren T. McCray on Nora Fairfax, 344290; second, O. Harris & Son on Defender's Lassie 2nd, 385300; third, O. Harris & Son on Disturber's Lassie 4th, 349146; fourth, J. M. Curtice on Donna Perfect 9th, 386353; fifth, W. J. Davis on Belle Perfection 17th, 368016; sixth, O. S. Gibbons & Son on Pansy Belle 4th, 364248; seventh, B. F. Maiden & Son on Daisy Dale, 388399.

Heifer Two Years and Under Three—First, O. Harris & Son on Miss Repeater 11th, 395824; second, Warren T. McCray on Joan Fairfax, 388823; third, W. J. Davis on Lady Albany 29th, 387237; fourth, Cyrus A. Tow on Disturber's Lassie 6th, 388029; fifth, A. A. Berry & Son on Gertrude Fairfax, 388822; sixth, J. M. Curtice on Donna Perfect 6th, 386582; seventh, Parmelee & Pierson on Mischief Maker 21st, 440143.

Heifer Senior Yearling—First, J. M. Curtice on Mischief Maker 36th, 440149; second, W. J. Davis on Vernet Queen 8th, 415817; third, O. Harris on Miss Gay Lad 15th, 412204; fourth, Cyrus A. Tow on Lady Standard, 411218; fifth, Warren T. McCray on Margaret Fairfax, 414473; sixth, J. C. Robinson & Son on Maple's Lass 32nd, 428993; seventh, Cyrus A. Tow on Standard's Lady, 411220.

Heifer Junior Yearling—First, J. M. Curtice on Vivian Donald, 464096; second, Cyrus A. Tow on Fairview Bonnie 2nd, 424257; third, W. J. Davis on Vernet Princess 10th, 427125; fourth, Wm. Andrews & Sons on Bonnibel, 422348; fifth, Warren T. McCray on Lovely Fairfax, 425483; sixth, A. A. Berry & Son on Primrose, 427500; seventh, Warren T. McCray.

Heifer Senior Calf—First, Cyrus A. Tow on Disturber's Lassie 12th, 448703; second, O. Harris & Sons on Miss Repeater 28th, 451579; third, J. C. Robinson & Son on Maple Lass 40th, 459777; fourth, W. J. Davis on Vernet Princess 15th, 452159; fifth, J. M. Curtice on Bell Perfect, 464087; sixth, J. M. Curtice on Donna Perfect 8th, 464093; seventh, Cyrus A. Tow on Disturber's Lassie 15th, 448706.

Heifer Junior Calf—First, J. M. Curtice on Donna Perfect 10th, 464094; second, W. J. Davis on Vernet Princess 24th, 461070; third, J. M. Curtice on Donna Perfect 11th, 464095; fourth, Cyrus A. Tow on Fairview Queen, 448713; fifth, Warren T. McCray on Adah Fairfax, 449267; sixth, O. Harris & Sons on Miss Perfection 10th, 460818; seventh, O. Harris & Sons on Miss Repeater 31st, 460819.

Champion Bull Two Years Old or Over—O. Harris & Son on Repeater 7th, 386905.

Champion Bull Under Two Years—Cyrus A. Tow on Disturber Jr., 424253.

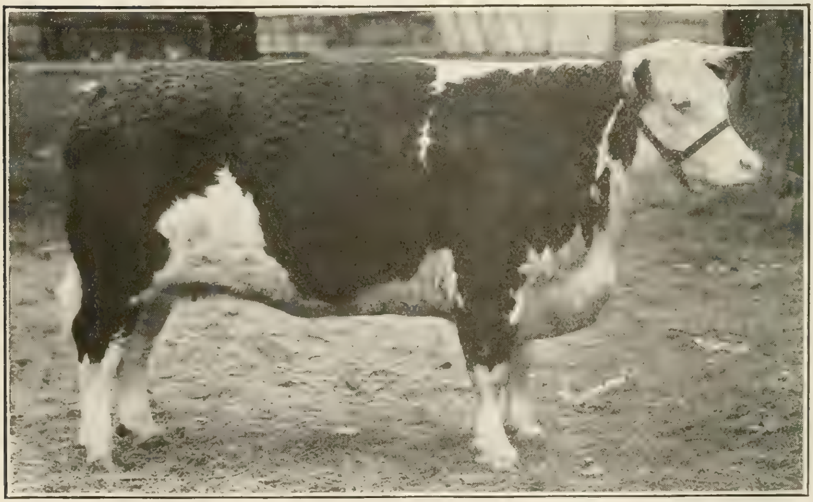
Champion Cow Two Years Old or Over—O. Harris & Sons on Miss Repeater 11th, 395824.

Champion Heifer Under Two Years Old—Cyrus A. Tow on Disturber's Lassie 12th, 448703.

Grand Champion Bull, Any Age—O. Harris & Sons on Repeater 7th, 386905.

Grand Champion Cow or Heifer, Any Age—O. Harris & Sons on Miss Repeater 11th, 395824.

Grand Champion Hereford Bull, Repeater 7th 386905; owned by O. Harris & Sons, Harris, Missouri.



Grand Champion Hereford Cow, Miss Repeater 11th, owned by O. Harris & Sons, Harris, Mo.

Graded Herd—First, O. Harris & Sons; second, J. M. Curtice; third, Warren T. McCray; fourth, W. J. Davis; fifth, O. S. Gibbons & Son; sixth, A. A. Berry & Son; seventh, Parmelee & Peirson.

Breeder's Young Herd—First, Cyrus A. Tow; second, W. J. Davis; third, J. M. Curtice; fourth, Warren T. McCray; fifth, J. C. Robinson & Son; sixth, Wm. Andrews & Sons.

Breeder's Calf Herd—First, W. J. Davis; second, Cyrus A. Tow; third, J. M. Curtice; fourth, O. Harris; fifth, Warren T. McCray; sixth, J. C. Robinson & Son; seventh, J. M. Curtice.

Get of Sire—First, O. Harris & Sons; second, Warren T. McCray; third, W. J. Davis; fourth, Cyrus A. Tow; fifth, J. M. Curtice; sixth, J. C. Robinson & Son; seventh, J. M. Curtice.

Produce of Cow—First, O. Harris & Sons; second, Warren T. McCray; third, W. J. Davis; fourth, Cyrus A. Tow; fifth, Cyrus A. Tow; sixth, J. C. Robinson & Son; seventh, J. M. Curtice.

IOWA HEREFORD SPECIALS.

Bull Three Years or Over—First, O. S. Gibbons & Son on Good Lad, 343996; second, Parmelee & Peirson on Beau Monde, 272726.

Bull Two Years and Under Three—First, E. M. Cassady & Son on Golden Lad, 381477; second, A. A. Berry & Son on Standard 4th, 382208; third, W. H. Campbell & Son on Polled Victor, 389779.

Bull Senior Yearling—First, O. S. Gibbons & Son on Beau Mischievious 2nd, 445517; second, A. A. Berry & Son on Beaumont, 442469.

Bull Junior Yearling—First, Cyrus A. Tow on Disturber Jr., 424253; second, Wm. Andrews & Sons on Bonnie Brae 60th, 413606; third, A. A. Berry & Son on Bonnie Gomez, 442473; fourth, B. F. Maiden & Son on Improver Real, 439906; fifth, Parmelee & Peirson on Publisher 2nd, 446774; sixth, W. H. Campbell & Son on Polled Britt, 446147.

Bull Senior Calf—First, Cyrus A. Tow on Standard 22nd, 448718; second, A. A. Berry & Son on Gomez Boatman, 447812; third, Cyrus A. Tow on Standard 23rd, 448719; fourth, Wm. Andrews & Sons on Bonnie Brae 79th, 451123; fifth, B. F. Maiden & Son on John Real, 465308; sixth, Parmelee & Peirson on Beau Monde 2nd, 448453.

Bull Junior Calf—First, Cyrus A. Tow on Fairview Boy, 448708; second, A. A. Berry & Son on Cedar Lad, 461631; third, Cyrus A. Tow on Standard 26th, 448722; fourth, E. M. Cassady & Son on Don Lee, 447950; fifth, O. S. Gibbons & Son on Good Lad 7th; sixth, Wm. Andrews & Sons on Bonnie Brae 84th, 451128.

Cow Three Years or Over—First, O. S. Gibbons & Son on Pansy Belle 4th, 364248; second, B. F. Maiden & Son on Daisy Dale, 388399; third, B. F. Maiden & Son on Daisy Shadeland 2nd, 291966; fourth, A. A. Berry & Son on Della Dean, 311860; fifth, Parmelee & Pierson on Hazel B., 207311.

Heifer Two Years and Under Three—First, Cyrus A. Tow on Disturber's Lassie 6th, 388029; second, A. A. Berry & Son on Gertrude Fairfax, 388822; third, Parmelee & Pierson on Mischief Maker 21st, 440143; fourth, O. S. Gibbons & Son on Priscilline, 391950.

Heifer Senior Yearling—First, Cyrus A. Tow on Lady Standard, 411218; second, Cyrus A. Tow on Standard's Lady, 411220; third, O. S. Gibbons & Son on Good Lady, 410706; fourth, A. A. Berry & Son on Della Gomez, 442474; fifth, Parmelee & Pierson on Dixie Bell 6th, 428672; sixth, B. F. Maiden & Son on May Flower 5th, 439910.

Heifer Junior Yearling—First, Cyrus A. Tow on Fairview Bonnie 2nd, 424257; second, Wm. Andrews & Sons on Bonnibel, 422348; third, A. A. Berry & Son on Primrose, 427500; fourth, Wm. Andrews & Son on Lady Dulcinea, 422351; fifth, Parmelee & Pierson on Nellie, 428151.

Heifer Senior Calf—First, Cyrus A. Tow on Disturber's Lassie 12th, 448703; second, Cyrus A. Tow on Disturber's Lassie 15th, 448706; third, Cyrus A. Tow on Disturber's Lassie 12th, 448705; fourth, A. A. Berry & Son on Miss Brae Gomez, 447815; fifth, Wm. Andrews & Sons on Miss Brae 57th, 451134; sixth, O. S. Gibbons & Son on Miss General 12th, 440116.

Heifer Junior Calf—First, Cyrus A. Tow on Fairview Queen, 448713; second, A. A. Berry & Son on Cedar Lass, 461632; third, B. F. Maiden & Son on Princess Real, 465312; fourth, Wm. Andrews & Sons on Miss Brae 60th, 451137; fifth, A. A. Berry & Son on Cedar Lass 3rd, 461634; sixth, Parmelee & Pierson on Trixie Monde, 459848.

Champion Bull Two Years Old or Over—O. S. Gibbons & Son on Good Lad, 343996.

Champion Bull Under Two Years Old—Cyrus A. Tow on Disturber Jr., 424253.

Champion Cow Two Years Old or Over—Cyrus A. Tow on Disturber's Lassie 6th, 388029.

Heifer Under Two Years Old—Cyrus A. Tow on Fairview Bonnie 2nd, 424257.

Grand Champion Bull, Any Age—Cyrus A. Tow on Disturber Jr., 424253.

Grand Champion Cow or Heifer, Any Age—Cyrus A. Tow on Fairview Bonnie 2nd, 424257.

Graded Herd—First, O. S. Gibbons & Son; second, A. A. Berry & Son; third, Parmelee & Pierson.

Breeder's Young Herd—First, Cyrus A. Tow; second, Wm. Andrews & Sons.

Breeders' Calf Herd—First, Cyrus A. Tow; second, Wm. Andrews & Sons; third, A. A. Berry & Son; fourth, O. S. Gibbons & Son; fifth, W. H. Campbell.

Get of Sire—First, Cyrus A. Tow; second, Wm. Andrews; third, A. A. Berry & Son; fourth, O. S. Gibbons & Son; fifth, B. F. Maiden & Son; sixth, Parmelee & Pierson.

Produce of Cow—First, Cyrus A. Tow; second, Cyrus A. Tow; third, O. S. Gibbons & Son; fourth, Wm. Andrews & Son; fifth, A. A. Berry & Son; sixth, Parmelee & Pierson.

ABERDEEN-ANGUS.

EXHIBITORS.

R. M. Anderson, Newell, Iowa; Matt Baker, Mitchellville, Iowa; C. D. and E. F. Caldwell, Burlington Junction, Mo.; Chas. Escher & Son, Botna, Iowa; J. O. Gring, Dallas Center, Iowa; W. A. McHenry, Denison, Iowa; W. J. Miller, Newton, Iowa; Clarence Pearson, Mitchellville, Iowa; H. H. Reed, Marengo, Iowa; Roberts & Williams, Atlantic, Iowa; Julius Tudor & Son, Iowa City, Iowa; Carl A. Rosenfeld, Kelley, Iowa.

JUDGE............................SILAS IGO, Indianola, Iowa.

AWARDS.

Bull Three Years or Over—First, Chas. Escher & Son on Prince Felzer, 156700; second, C. D. & E. F. Caldwell on Kiahogia, 150488; third, Matt Baker on Black Joe 2nd B.; fourth, H. H. Reed on Evening Star, 142083.

Bull Two Years, Under Three—First, R. M. Anderson & Sons on Provo 2nd, 160575; second, Julius Tudor & Son on Tyrus, 170999; third, W. J. Miller on Enus 4th, 160576; fourth, Clarence Pearson on Black Lad of Leaside 2nd, 170833.

Bull Senior Yearling—First, H. H. Reed on Glenmere Eclipser 2nd, 185505; second, Roberts & Williams on Deceiver's Knight, 168976; third, R. M. Anderson & Sons on Prince Blueblood, 183987.

Bull Junior Yearling—First, R. M. Anderson & Sons on Lord Melamere, 171535; second, Carl A. Rosenfeld on Gay Eric 3rd, 172519; third, W. A. McHenry on Bravo of Denison, 168878; fourth, Carl A. Rosenfeld on Helen's Quiet Boy, 175679; fifth, H. H. Reed on Heatherdale Comet; sixth, W. J. Miller on Barbara's Rose Gay 2nd, 174109.

Bull Senior Calf—First, W. A. McHenry on Blackcap Bertram, 183787; second, C. D. & E. F. Caldwell on Burgomaster, 180851; third, W. A. McHenry on Earl Marshall, 183780; fourth, Julius Tudor & Son on Glyn Mawr Quiet Lad; fifth, Chas. Escher & Son on Pandeau, 180031; sixth, Chas. Escher & Son on Eudorus, 180075; seventh, R. M. Anderson & Son on Jilts Jerome 2nd, 183981.

Bull Junior Calf—First, C. D. & E. F. Caldwell on Everytime, 181219; second, R. M. Anderson & Sons on Lord Melamore, 106545; third, Julius Tudor & Son on Fryon; fourth, W. A. McHenry on Blackcap Bryce, 183799.

Cow Three Years or Over—First, C. D. & E. F. Caldwell on Pride Petite, 141445; second, R. M. Anderson & Sons on Key of Ind. 4th, 150048; third, C. D. & E. F. Caldwell on Erica Dean, 149979; fourth, W. J. Miller on Barbara Woodson 2nd, 139901; fifth, H. H. Reed on Star's Rose, 110615; sixth, W. J. Miller on Barbara Woodson, 129611.

Heifer Two Years, Under Three—First, C. D. & E. F. Caldwell on Erito, 162450; second, R. M. Anderson & Son on Eulima 28th, 171532; third, W. A. McHenry on Queen McHenry 58th, 168864; fourth, W. A. McHenry on Pride McHenry 116th, 168855; fifth, W. J. Miller on Ridge Lawn Pride, 171454

Heifer Senior Yearling—First, C. D. & E. F. Caldwell on Eritus, 162446; second, R. M. Anderson & Son on Eulima 28th, 171532; third, W. A. McHenry on Queen McHenry 58th, 168864; fourth, W. A. McHenry on Pride McHenry 116th, 168855; fifth, W. J. Miller on Ridge Lawn Pride, 171454.

Heifer Junior Yearling—First, Roberts & Williams on Rose Abess 7th, 185278; second, C. D. & E. F. Caldwell on Esthonia 12th; third, C. D. & E. F. Caldwell on Itos Pride, 170572; fourth, W. A. McHenry on Pride McHenry 124th, 168877; fifth, W. J. Miller on Ridge Lawn Kata, 171457; sixth, Clarence Pearson on Lora's Grace, 174928; seventh, H. H. Reed on Glenmere Hilda, 181787.

Heifer Senior Calf—First, W. A. McHenry on Pride McHenry 129th, 183779; second, R. M. Anderson & Sons on Bell Eclipser of Newell 3rd, 183976; third, Carl A. Rosenfeld; fourth, C. D. & E. F. Caldwell on Black Jestress 3rd, 180853; fifth, Chas. Escher & Son on Blue Blood Lady 4th; sixth, H. H. Reed on Black Daw 2nd; seventh, Julius Tudor & Son on Enamma 2nd.

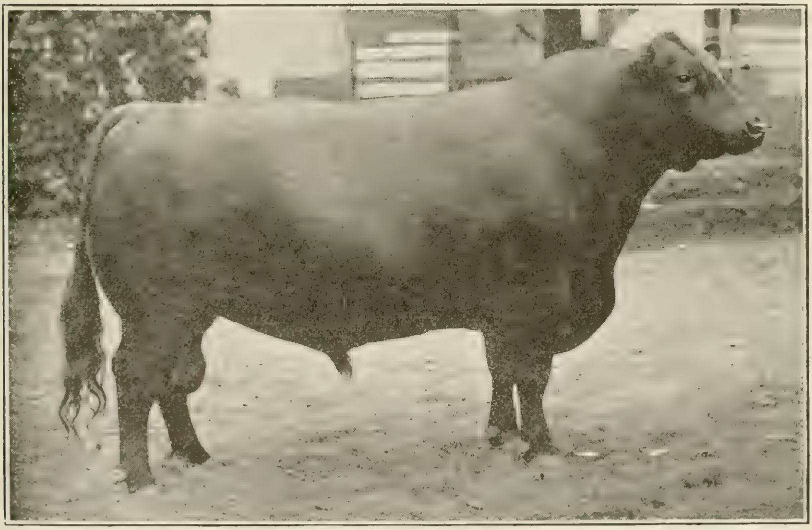
Heifer Junior Calf—First, Chas. Escher & Son on Eulotta, 180061; second, C. D. & E. F. Caldwell on Blackbird 156th, 180868; third, R. M. Anderson & Sons on Erina Lassie 5th, 183985; fourth, Julius Tudor & Sons on Black Cap of Glyn Mawr; fifth, W. J. Miller on Black Rose.

Champion Bull Two Years Old or Over—Chas. Escher & Son on Prince Felzer, 156700.

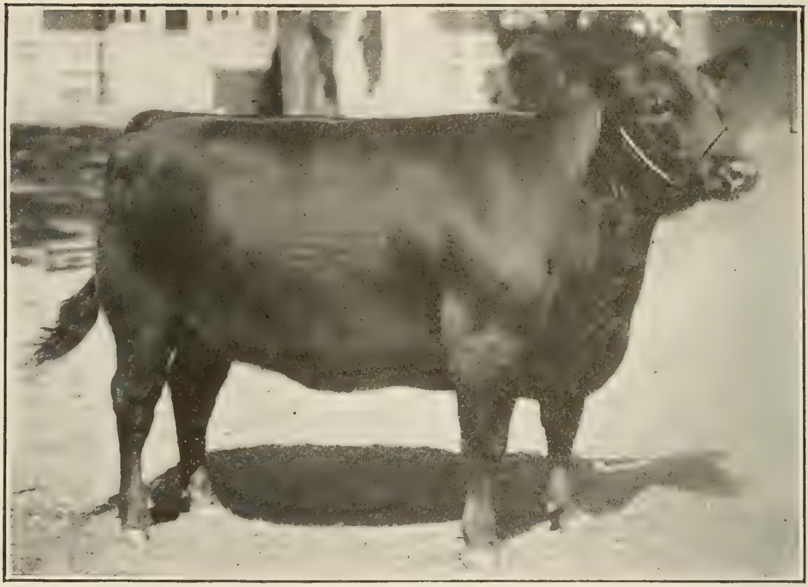
Champion Bull Under Two Years Old—W. A. McHenry on Blackcap Bertram, 183787.

Champion Cow Two Years Old or Over—C. D. & E. F. Caldwell on Erito, 162450.

Champion Heifer Under Two Years' Old—C. D. & E. F. Caldwell on Eritus, 162446.



Champion Aberdeen Angus Bull, Prince Felzer 156700, owned by Chas. Escher & Son, Botna, Iowa.



Grand Champion Aberdeen Angus Cow, Eritus; owned by C. D. & E. F. Caldwell, Burlington Junction, Missouri.

Grand Champion Bull, Any Age—Chas. Escher & Son on Prince Felzer, 156700.

Grand Champion Cow or Heifer, Any Age—C. D. & E. F. Caldwell on Eritus, 162446.

Graded Herd—First, C. D. & E. F. Caldwell; second, R. M. Anderson & Sons; third, H. H. Reed; fourth, W. J. Miller.

Breeder's Young Herd—First, C. D. & E. F. Caldwell; second, W. A. McHenry.

Breeder's Calf Herd—First, W. A. McHenry; second, C. D. & E. F. Caldwell; third, Chas. Escher & Son; fourth, R. M. Anderson & Sons; fifth, Julius Tudor & Son.

Get of Sire—First, C. D. & E. F. Caldwell; second, R. M. Anderson; third, W. A. McHenry; fourth, H. H. Reed; fifth, Julius Tudor & Son; sixth, Matt Baker; seventh, W. J. Miller.

Produce of Cow—First, C. D. & E. F. Caldwell; second, Chas. Escher & Son; third, R. M. Anderson & Son; fourth, W. J. Miller; fifth, Julius Tudor & Son.

GALLOWAY.

EXHIBITORS.

G. E. Clark, Topeka, Kansas; C. S. Hechtner, Chariton, Iowa.

JUDGE........................CHAS. ESCHER, JR., Botna, Iowa.

AWARDS.

Bull Three Years or Over—First, C. S. Hechtner on Prince Favorite, 36212; second, G. E. Clark on Casino, 36410.

Bull Two Years, Under Three—First, C. S. Hechtner on Emperor of Drumlanrig, 38304; second, G. E. Clark on High Tide of C. V., 28187.

Bull Senior Yearling—First, G. E. Clark on Echo of Capital View, 38165; second, C. S. Hechtner on Comer Boy, 38305.

Bull Junior Yearling—First, G. E. Clark on Messenger Boy of C. V., 39069; second, C. S. Hechtner on Abbie's Favorite, 38315.

Bull Senior Calf—First, C. S. Hechtner on Myrtle's Standpatter, 38818; second, G. E. Clark on Nettie's Medalist, 39057.

Bull Junior Calf—First, C. S. Hechtner on Kingsley of Maples, 39241; second, G. E. Clark on Choice Goods, 39473.

Cow Three Years or Over—First, G. E. Clark on Nelly Melville, 36223; second, G. E. Clark on Daisy Dimple, 35187; third, C. S. Hechtner on Clara of Maples 2nd, 35169.

Heifer Two Years, Under Three—First, C. S. Hechtner on Abbie's Queen, 36548; second, G. E. Clark on Alberta 2nd, 37543.

Heifer Senior Yearling—First, C. S. Hechtner on Nellie of Maples 4th, 37633; second, G. E. Clark on May Flower's 4th, 38486.

Heifer Junior Yearling—First, C. S. Hechtner on Nellie of Maples 5th, 38314; second, G. E. Clark on May Flower of C. V., 38263.

Heifer Senior Calf—First, C. S. Hechtner on Tara's Pride, 39238; second, G. E. Clark on Mola's Pride of C. V., 39068.

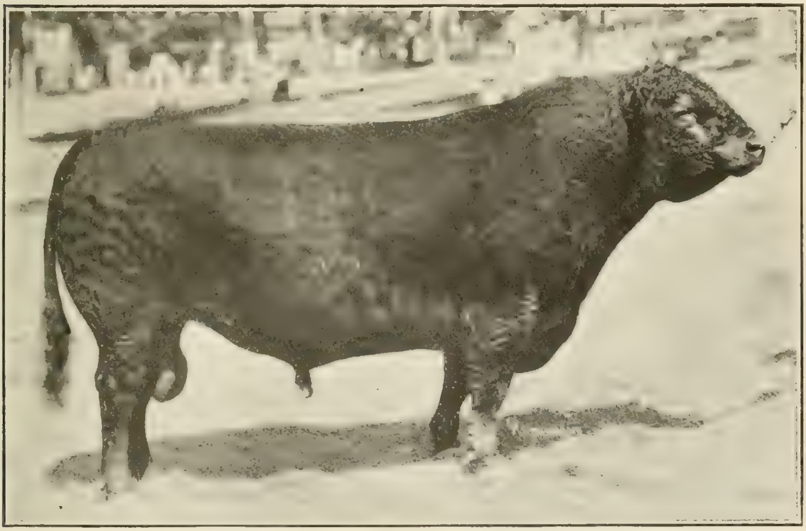
Heifer Junior Calf—First, C. S. Hechtner on Abbie's Queen 2nd.

Champion Bull Two Years or Over—C. S. Hechtner on Prince Favorite, 36212.

Champion Bull Under Two Years Old—C. S. Hechtner on Myrtle's Standpatter, 38818.

Champion Cow Two Years Old or Over—G. E. Clark on Nelly Melville, 36223.

Champion Heifer Under Two Years Old—C. S. Hechtner on Nellie of Maples 5th, 38314.



Grand Champion Galloway Bull, Prince Favorite, owned by C. S. Hechtner, Chariton, Iowa.

Grand Champion Bull, Any Age—C. S. Hechtner on Prince Favorite, 36212.

Grand Champion Cow or Heifer, Any Age—G. E. Clark on Nelly Melville, 36223.

Graded Herd—First, C. S. Hechtner; second, G. E. Clark.

Breeder's Young Herd—First, C. S. Hechtner; second, G. E. Clark.

Breeder's Calf Herd—First, C. S. Hechtner; second, G. E. Clark.

Get of Sire—First, C. S. Hechtner; second and third, G. E. Clark.

Produce of Cow—First, G. E. Clark; second, C. S. Hechtner; third, G. E. Clark; fourth, C. S. Hechtner.

POLLED DURHAM.

EXHIBITORS.

Achenbach Bros., Washington, Kansas; H. W. Dueker, Wellman, Iowa; S. S. Huntley & Son, Chariton, Iowa; Albert Hultine, Saronville, Neb.; Chas. Irvine, Ankeny, Iowa; Ed Stegelin, Straight Creek, Kansas; Joe Shaver, Kalona, Iowa; W. W. Seeley, Stuart, Iowa.

JUDGE........................CHAS. ESCHER, JR., Botna, Iowa.

AWARDS.

Bull Three Years or Over—First, Achenbach Bros. on Meadow Sultan, 8721; second, Albert Hultine on Select Goods, 8719; third, W. W. Seeley on Silver Secret, 339882; fourth, L. S. Huntley & Son on Iowa Lad, 9441.

Bull Two Years, Under Three—First, Ed Stegelin on True Sultan, 9157; second, L. S. Huntley & Son on Silver Champion, 9873; third, L. S. Huntley & Son on Red Champion, 9873.

Bull Senior Yearling—First, W. W. Seeley on Roan Goods, 11335.

Bull Junior Yearling—First, Achenbach Bros. on Intense Sultan, 385899; second, Chas. Irvine on Premier Sultan, 10842; third, Albert Hultine on Happy Goods, 11372; fourth, W. W. Seeley on Victor Clipper.

Bull Senior Calf—First, Joe Shaver on Hazlewood Duke; second, Achenbach Bros. on Baron Francis, 11320; third, Achenbach Bros. on Sultan's Chancellor; fourth, Achenbach Bros. on Thankful Sultan 2nd, 11321; fifth, Albert Hultine on Promotor, 11373.

Bull Junior Calf—First, W. W. Seeley on Clipper Goods; second, Albert Hultine on Fern Lad, 11374.

Cow Three Years or Over—First, Ed Stegelin on Lady Marshall; second, Achenbach Bros. on Thankful Martha, Vol. 5; third, L. S. Huntley & Son on Iowa Vic, Vol. 6.

Heifer Two Years, Under Three—First, Achenbach Bros. on Minute 2nd, Vol. 5, p. 344; second, L. S. Huntley & Son on Iowa Marjory 3rd.

Heifer Senior Yearling—First, Achenbach Bros. on Sultana, Vol. 6; second, Albert Hultine on Fern Goods, Vol. 6; third, Albert Hultine on Select Belle, Vol. 6.

Heifer Junior Yearling—First, Achenbach Bros. on Sultana Kora, Vol. 6; second, Achenbach Bros. on Minute 3rd, Vol. 6; third, L. S. Huntley & Son on Sweet Marie; fourth, Albert Hultine on Select Augusta, Vol. 6.

Heifer Senior Calf—Achenbach Bros. on Choice Sultana, Vol. 6.

Heifer Junior Calf—First, Achenbach Bros. on Kora Sultana, Vol. 6; second, Achenbach Bros. on The Rosary; third, Albert Hultine on Capacious Augusta, Vol. 6; fourth, L. S. Huntley & Son on Minnie B.

Champion Bull Two Years Old or Over—Ed. Stegelin on True Sultan, 9157.

Champion Bull Under Two Years Old—Joe Shaver on Hazlewood Duke.

Champion Cow Two Years Old or Over—Ed. Stegelin on Lady Marshall.

Champion Heifer Under Two Years Old—Achenbach Bros. on Sultana, Vol. 6.

Grand Champion Bull, Any Age—Ed Stegelin on True Sultan, 9157.

Grand Champion Cow or Heifer, Any Age—Ed Stegelin on Lady Marshall.

Graded Herd—First, Achenbach Bros.; second, L. S. Huntley & Son.

Breeders' Young Herd—First, Achenbach Bros.

Breeders' Calf Herd—First, Achenbach Bros.

Get of Sire—First, Achenbach Bros.; second, L. S. Huntley & Son; third, Albert Hultine; fourth, W. W. Seeley.

Produce of Cow—First, Achenbach Bros.; second, Achenbach Bros.; third, L. S. Huntley & Son; fourth, Achenbach Bros.; fifth, W. W. Seeley.

RED POLLED.

EXHIBITORS.

J. B. Ahlers, West Bend, Wisconsin; Frank J. Clouss, Barnum; W. S. Hill, Alexandria, S. Dakota; Haussler Bros., Holbrook, Nebraska; J. W. Larrabee, Earlville, Illinois.

JUDGE........................ELLIOTT DAVIS, Lincoln, Nebr.

AWARDS.

Bull Three Years or Over—First, Frank J. Clouss on Paul, 20994; second, Haussler Bros. on Teddy's Best, 17603; third, W. S. Hill on Marshall, 21100; fourth, J. W. Larrabee on Apple Gurnard, 20107.

Bull Two Years, Under Three—First, J. W. Larrabee on Teddy's Charmer, 23100; second, J. B. Ahlers on Norman, 22886.

Bull Senior Yearling—First, W. S. Hill on Teddy's Perfection, 24538; second, J. W. Larrabee on Blythfield Charley, 24602.

Bull Junior Yearling—First, Haussler Bros. on Royal Charmer, 25740; second, Haussler Bros. on Gay Jack, 25281; third, J. W. Larrabee on Queen Duddy, 25806; fourth, W. S. Hill on Roland, 24876.

Bull Senior Calf—First, W. S. Hill on Martin, 25502; second, Frank J. Clouss on Teddie's Goods, 25399; third, Frank J. Clouss on Earl, 25401; fourth, J. W. Larrabee on Dannie, 26119; fifth, Haussler Bros. on Wild Boy.

Bull Junior Calf—First, W. S. Hill on Curtis; second, Frank J. Clouss on Archer; third, J. W. Larrabee on Nelson, 26120; fourth, J. W. Larrabee on Christopher, 26122; fifth, J. W. Larrabee on Sam, 26057.

Cow Three Years or Over—First, Haussler Bros. on Gazelle, 32011; second, W. S. Hill on Mary, 25015; third, Frank J. Clouss on Lena 28536; fourth, W. S. Hill on Pearl, 27817; fifth, J. W. Larrabee on Davy Belle 4th, 31633.

Heifer Two Years, Under Three—First, W. S. Hill on Veda, 36333; second, Haussler Bros. on Tippie, 35577; third, J. W. Larrabee on Lucy, 35536; fourth, Frank J. Clouss on Rozell, 36378; fifth, J. W. Larrabee on Sweet Rose, 35531.

Heifer Senior Yearling—First, J. W. Larrabee on Sarah, 36492; second, W. S. Hill on Dakota Rose, 37371; third, J. W. Larrabee on Chicago Girl, 37351; fourth, J. B. Ahlers on Pearl, 36248.

Heifer Junior Yearling—First, Frank J. Clouss on Dinal, 38494; second, W. S. Hill on Ruby Rose, 37389; third, Haussler Bros. on Lady Crook, 37373; fourth, J. W. Larrabee on Rose Bud, 37352; fifth, J. W. Larrabee on Flora, 37357.

Heifer Senior Calf—First, J. W. Larrabee on Jello, 39431; second, J. W. Larrabee on Allis, 39432; third, Frank J. Clouss on Princess, 38503; fourth, W. S. Hill on Charlotte, 38595; fifth, W. S. Hill on Henrietta, 38593.

Heifer Junior Calf—First, J. B. Ahlers on Coronet; second, Frank J. Clouss on Diana; third, Haussler Bros. on Charming Lady; fourth, Frank J. Clouss on Ringlet; fifth, W. S. Hill on Flo.

Champion Bull Two Years Old or Over—J. W. Larrabee on Teddy's Charmer, 23100.

Champion Bull Under Two Years Old—W. S. Hill on Teddy's Perfection, 24538.

Champion Cow Two Years Old or Over—Haussler Bros. on Gazelle, 32011.

Champion Heifer Under Two Years Old—J. W. Larrabee on Sarah, 36492.

Grand Champion Bull, Any Age—J. W. Larrabee on Teddy's Charmer, 23100.

Grand Champion Cow or Heifer, Any Age—Haussler Bros. on Gazelle, 32011.

Graded Herd—First, J. W. Larrabee; second, Frank J. Clouss; third, Haussler Bros.; fourth, W. S. Hill; fifth, J. W. Larrabee.

Breeders' Young Herd—First, J. W. Larrabee; second, Haussler Bros.; third, Frank J. Clouss; fourth, W. S. Hill; fifth, J. W. Larrabee.

Breeders' Calf Herd—First, J. W. Larrabee; second, W. S. Hill; third, Frank J. Clouss; fourth, J. W. Larrabee; fifth, Haussler Bros.

Get of Sire—First, Haussler Bros.; second, J. W. Larrabee; third, W. S. Hill; fourth, Frank J. Clouss; fifth, J. W. Larrabee.

Produce of Cow—First, J. W. Larrabee; second, Frank J. Clouss; third, W. S. Hill; fourth, J. W. Larrabee; fifth, W. S. Hill.

NINE—6448..HCP..March 29

HOLSTEIN.

EXHIBITORS.

Nathan Dickinson, Lake Geneva, Wis.; Elliott Bros., Woodward, Iowa; Iowana Farms, Davenport, Iowa; S. M. Randall, Waupun, Wis.; E. S. Schroeder, Moorehead, Minn.; U. S. Indian School, Genoa, Neb.

JUDGE........................W. J. GILLETT, Rosendale, Wis.

AWARDS.

Bull Three Years or Over—First, Iowana Farms on Oak DeKol Ollie Homestead, 85529; second, E. C. Schroeder on Sir Korndyke Hengerveld DeKol 36th, 85968; third, E. C. Schroeder on Sir Pieterje Ormsby Mercedes 14th, 81142.

Bull Two Years, Under Three—First, Nathan Dickinson on Buffalo Forty Beets, 87922; second, E. C. Schroeder on Buffalo Pieter Doede, 94018.

Bull One Year, Under Two—First, E. C. Schroeder on Sir Korndyke Fytie, 110159; second, Nathan Dickinson on Iowana Sir Ollie, 114797; third, U. S. Indian School on Tate Lincoln 3rd, 120900.

Bull Senior Calf—First, Nathan Dickinson on Walcowis Johanna Champion; second, E. C. Schroeder on Sir Korndyke Wren, 124834; third, E. C. Schroeder on Sir Korndyke Homestead, 123103; fourth, U. S. Indian School on Tate Lincoln 5th; fifth, Iowana Farms on Iowana Ocean Fayne, 122343; sixth, Iowana Farms on White King, 122341.

Bull Junior Calf—First, E. C. Schroeder on Sir Korndyke Ormsby Piebe, 13270; second, E. C. Schroeder on Prince Korndyke Jewel Beauty, 131755; third, E. C. Schroeder on Sir Korndyke Fytje Pieterje, 132719; fourth, Elliott Bros. on Violet King Korndyke, 136989; fifth, Nathan Dickinson on Buffalo Forty Beets 2nd, 129397.

Cow Four Years or Over—First, Iowana Farms on Lady Reka Mooie, 94410; second, Nathan Dickinson on Groveland Pauline Posh, 102357; third, U. S. Indian School on Woodlawn Daisy Cornucopia, 134499; fourth, E. C. Schroeder on Glen DeKol Artis 3rd, 68827; fifth, Elliott Bros. on Gudreitje Gerben Wayne, 108448; sixth, Iowana Farms on Star Watson Mooie 3rd, 144580.

Cow Three Years and Under Four—First, E. C. Schroeder on Heilo Pieterje Ormsby Mercedes, 154366; second, E. C. Schroeder on Jennie Wren Ormsby, 161799; third, Iowana Farms on Johanna Fayne Pauline, 155158; fourth, Iowana Farms on Fryslan Waldorf, 155158; fifth, Elliott Bros. on Jessie Fobes Pieterje, DeKol, 167418.

Heifer Two Years, Under Three—First, E. C. Schroeder on Burke Spring Brook Ormsby, 162968; second, E. C. Schroeder on Burke Mercedes Ormsby, 173400; third, Iowana Farms on Star Watson 4th, 184905; fourth, U. S. Indian School on Abbekerk Golden Skylark, 212256; fifth, Nathan Dickinson on Daisy Johanna Vaughn, 195128.

Heifer Senior Yearling—First, E. C. Schroeder on Queen Mercedes Ormsby, 203800; second, E. C. Schroeder on Jennie Wren Pieterjie, 203797; third, U. S. Indian School on Lady Abbekirk Golden 2nd, 211725; fourth, Iowana Farms on Colantha DeKol Josephine, 200742; fifth, U. S. Indian School on Parthena Lady Golden 3rd, 211727.

Heifer Junior Yearling—First, Iowana Farms on Una Korndyke, 221809; second, Iowana Farms on Iowana Countess Jessie, 201332; third, S. M. Randall on Grendola Korndyke, 230449; fourth, Iowana Farms on Ash Grove Gewina Pontiac, 213868; fifth, E. C. Schroeder on Colanthe Pieterje Lass, 211240.

Heifer Senior Calf—First, Elliott Bros. on Tudultje Korndyke; second, Elliott Bros. on Bonnie Jean; third, Nathan Dickinson on Cleveland Pontiac DeKol Inka, 246039; fourth, U. S. Indian School on Parthena Lady Golden 4th, 245110; fifth, U. S. Indian School on Lady Pride Mechthilde 2nd, 245109.

Heifer Junior Calf—First, Nathan Dickinson on Pontiac Inka Netherland; second, E. C. Schroeder on Jenny Wren Mercedes, 239968; third, E. C. Schroeder on Glen DeKol Mercedes, 239965; fourth, Iowana Farms on Iowana Ollie Watson, 235520; fifth, S. M. Randall on Groveland Pontiac Inka Netherland, 246040.

Champion Bull Two Years Old or Over—Iowana Farms on Oak DeKol Ollie Homestead, 85529.

Champion Bull Under Two Years Old—E. C. Schroeder on Sir Korndyke Ormsby Piebe, 132720.

Champion Cow Two Years Old or Over—Iowana Farms on Lady Reka Mooie, 94410.

Champion Heifer Under Two Years Old—Iowana Farms on Una Korndyke, 221809.

Grand Champion Holstein Cow, Lady Reka Mooie, 94410, owned by Iowana Farms, Davenport, Iowa.

Grand Champion Bull Any Age—Iowana Farms on Oak DeKol Ollie Homestead, 85529.

Grand Champion Cow or Heifer Any Age—Iowana Farms on Lady Reka Mooie, 94410.

Graded Herd—First, Iowana Farms; second, E. C. Schroeder; third, Nathan Dickinson.

Breeders' Young Herd—First, E. C. Schroeder; second, U. S. Indian School; third, S. M. Randall.

Breeders Calf Herd—First, E. C. Schroeder; second, U. S. Indian School; third, Elliott Bros.

Get of Sire—First, E. C. Schroeder; second, E. C. Schroeder; third, Iowana Farms; fourth, E. C. Schroeder; fifth, U. S. Indian School.

Produce of Cow—First, Iowana Farms; second, E. C. Schroder; third, E. C. Schroeder; fourth, U. S. Indian School.

Premier Exhibitor—E. C. Schroeder.

Premier Breeder—E. C. Schroeder.

JERSEY.

EXHIBITORS.

Burweb Farm, Minneapolis, Minn.; W. S. Dixon, Brandon, Wis.; Nellie Fabyan, Geneva, Ill.; J. B. Smith, Platte City, Mo.; James I. Wade, Weldon, Iowa.

JUDGE..................HUGH G. VAN PELT, Waterloo, Iowa.

AWARDS.

Bull Three Years or Over—First, Nelle Fabyan on Ocean Blue, 99477; second, Burweb Farm on Combination You'll Do, 106878.

Bull Two Years, Under Three—First, J. B. Smith on Stockwell's Champion, 115854.

Bull One Year, Under Two—First, Nelle Fabyan on Light Blue of Riverbank, 115822; second, Burweb Farm on Viola's Golden Prince 111186; third, J. B. Smith on Waterloo Boy, 124170.

Bull Senior Calf—First, W. S. Dixon on Togo's Oxford Majesty, 123731; second, W. S. Dixon on Interested Financier, 122436; third, J. B. Smith on Fountain Lad; fourth, J. B. Smith on Financial's Wonder Lad.

Bull Junior Calf—First, W. S. Dixon on Miranda's Oxford Majesty, 123732; second, J. B. Smith on Wonder's Boy; third, W. S. Dixon on Gamboge's Oxford Majesty, 124011; fourth, Nelle Fabyan on Fern's Noble of Riverbank; fifth, Nelle Fabyan on Golden Fern 2nd of Riverbank.

Cow Four Years or Over—First, Burweb Farm on Combination's Speckled Hip, 291751; second, Burweb Farm on Merline Ibsen, 246596; third, Nelle Fabyan on Bright Lilac, 17092; fourth, Nelle Fabyan on Mabel 56th, 16536; fifth, Nelle Fabyan on Burweb's Night Dream, 258203; sixth, Burweb Farm on Roselay's Lady, 270482.

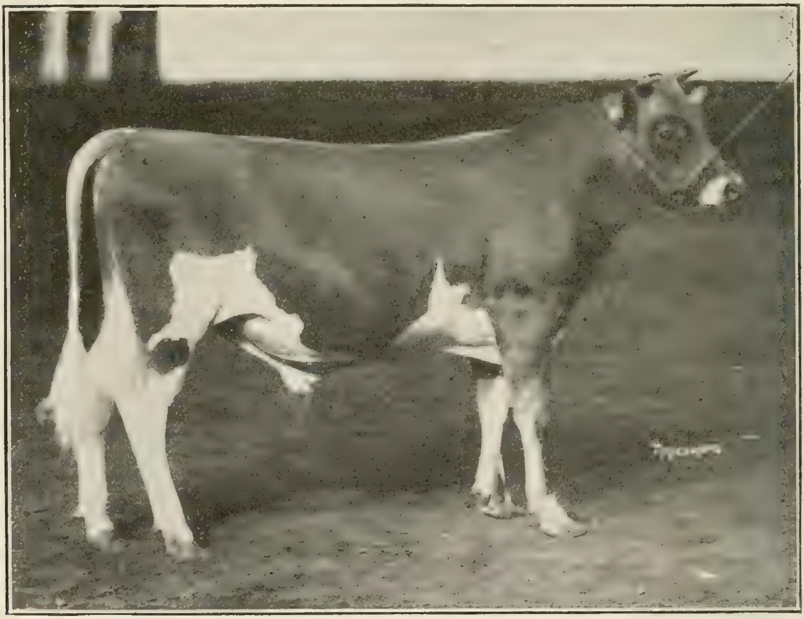
Cow Three Years, Under Four—First, Nelle Fabyan on Grey Portia, 17758; second, Nelle Fabyan on Matrons Queen 2nd, 18389; third, Nelle Fabyan on Cowslips Glory, 18573; fourth. J. B. Smith on Pleasant Valley, 308893; fifth, Burweb Farms on Oxford's Queen Mary, 258664.

Heifer Two Years, Under Three—First, W. S. Dixon on Eminent's Reminder 2nd, 267164; second, Burweb Farms on Ibsen's Glory Coulisse, 274077; third, W. S. Dixon on Scott's Noble Brenda, 274902; fourth, J. B. Smith on Stockwell's Baroness, 296401; fifth, Nelle Fabyan on Nelle of Riverbank, 295951.

Heifer Senior Yearling—First, W. S. Dixon on Majesty's Oxford Vance, 296624; second, J. B. Smith, Stockwell's Golden Maiden, 296684; third, Burweb Farms on Glory's Coulisse, 285098; fourth, J. B. Smith on Stockwell's Jersey Wonder, 313391.

Heifer Junior Yearling—First, J. B. Smith on Stockwell Sarah; second, W. S. Dixon on Oxford Majesty's Miranda, 312422; third, J. B. Smith on Warder's Pansy; fourth, Nelle Fabyan on Rose, 295952; fifth, Burweb Farm on Burweb's Buttercup, 210448.

Heifer Senior Calf—First, W. S. Dixon; second, W. S. Dixon on Majesty's Oxford Rose, 312974; third, J. B. Smith on Golden Maid's Lass; fourth, Bur-



Grand Champion Jersey Bull, Togo's Oxford Majesty, 12371; owned by W. S. Dixon, Brandon, Wis.

web Farm on Burweb's Harriett, 310450; fifth, Burweb Farm on Burweb's Helen, 310449.

Heifer Junior Calf—First, W. S. Dixon on Oxford Majesty's May, 312975; second, Nelle Fabyan on Sultana of Riverbank; third, J. B. Smith, Stockwell's Pearl.

Champion Bull Two Years Old or Over—J. B. Smith on Stockwell's Champion, 115854.

Champion Bull Under Two Years Old—W. S. Dixon on Togo's Oxford Majesty, 123731.

Champion Cow Two Years Old or Over—Nelle Fabyan on Grey Portia, 17758.

Champion Heifer Under Two Years Old—W. S. Dixon.

Grand Champion Bull, Any Age—W. S. Dixon on Togo's Oxford Majesty, 123731.

Grand Champion Cow or Heifer, Any Age—Nelle Fabyan on Grey Portia, 17758.

Graded Herd—First, Nelle Fabyan; second, Burweb Farms; third, J. B. Smith.

Breeders' Young Herd—First, W. S. Dixon; second, J. B. Smith; third, J. B. Smith.

Breeders' Calf Herd—First, J. B. Smith.

Get of Sire—First, Burweb Farm; second, W. S. Dixon; third, J. B. Smith; fourth, Nelle Fabyan; fifth, J. B. Smith.

Produce of Cow—First, J. B. Smith; second, W. S. Dixon; third, J. B. Smith; fourth, Burweb Farms; fifth, Nelle Fabyan.

Premier Exhibitor—J. B. Smith.

Premier Breeder—J. B. Smith.

GUERNSEYS.

EXHIBITORS.

F. M. Buck, Waukee, Iowa; A. W. & F. E. Fox, Waukesha, Wisconsin; H. W. Griswold, West Salem, Wisconsin; Chas. L. Hill, Rosendale, Wisconsin; Wm. M. Jones, Waukesha, Wisconsin; W. W. Marsh, Waterloo, Iowa; Wilcox & Stubbs, Des Moines, Iowa.

JUDGE.........................GEO. P. GROUT, Duluth, Minn.

AWARDS.

Bull Three Years or Over—First, W. W. Marsh on Hayes Cherub II, 25147; second, Wilcox & Stubbs on Gay's May King, 19731; third, Chas. L. Hill on Imp. Victory of Sarnia, 22001; fourth, A. W. & F. E. Fox on Raymond of Les Belles, 2849, P. S.; fifth, Chas. L. Hill on Imp. Prince of Sarnia, 22000; sixth, Wilcox & Stubbs on Imp. Holden IV, 12179.

Bull Two Years, Under Three—First, A. W. & F. E. Fox, on Raymond's Billy of the Hogue, 21752; second, W. Marsh on Roehampton Croesus III, 2635; third, Wm. M. Jones on Billy of Paradise Spring City, 21162; fourth, Wilcox & Stubbs on College Star, 20678.

Bull One Year, Under Two—First, Chas. L. Hill on Imp. Diamond of the Lubin, 26257; second, A. W. & F. E. Fox on Gratify's Standard, 25521; third, A. W. & F. E. Fox on Glenwoods Volunteer, 24228; fourth, Wilcox & Stubbs on Vanquisher of Beirntown, 25710; fifth, F. M. Buck on Crimson's Sequel, 27745.

Bull, Senior Calf—First, W. W. Marsh on Cherry's Memento, 27562; second, W. M. Jones on Daisy's Sequel Boy of Denmark, 26406; third, Chas. L. Hill on Domby of Sarnia; fourth, Wm. M. Jones on Violet's Walter Sequel, 26688; fifth, A. W. & F. E. Fox on Nelly's Walter Sequel, 26408; sixth, Wm. M. Jones on Ouidal's Sequel of Denmark, 27941.

Bull Junior Calf—First, Wm. M. Jones on Ada's Douglas, 28961; second, W. W. Marsh on Lady Robert's Souvenir, 28945; third, Wm. M. Jones on Dairy Maid's Sequel of Denmark, 28736; fourth, W. W. Marsh on Dairymaid's Criterion, 28187; fifth, Wilcox & Stubbs on King of the Rilmas.

Cow Four Years or Over—First, W. W. Marsh on Deanie 16th, 8906; second, A. W. & F. E. Fox on Essie Jeweller, 14265; third, W. W. Marsh on Imp. Lady Jebbe L. 7341; fourth, W. W. Marsh on Jedetta of Pinehurst, 17434; fifth, Chas. L. Hill on Imp. Lady Tamworth, 33123; sixth, W. W. Marsh on Diana of Calais 5th, 6843.

Cow Three Years, Under Four—First, W. W. Marsh on Imp. Jessamine of the Ponchez, 9042; second, A. W. & F. E. Fox on School Girl of Waukesha, 35369.

Heifer Two Years, Under Three—First, W. W. Marsh on Fleurie Mar, 43156; second, W. W. Marsh on Polly of Briquet, 43669; third, Chas. L. Hill on Imp. Bee Bee of Sarnia; fourth, A. W. & F. E. Fox on Dairymaid of Waukesha, 38053; fifth, Wm. M. Jones on Luecicero's Bonnie, 44081; sixth, Wm. M. Jones on Raymond's Juliana, 38376.

Heifer Senior Yearling—First, W. W. Marsh on Lily La Pine, 43842; second, A. W. & F. E. Fox on Pleasure's Promise, 43528; third, Wm. M. Jones on Lady Violet, 43089; fourth, Wilcox & Stubbs on Buttercup 2d of the Roundebosch, 50333; fifth, Wm. M. Jones on Sequel's Aurea, 43086.

Heifer Junior Yearling—First, A. W. & F. E. Fox on Sundari's Dairymaid, 45635; second, Wilcox & Stubbs on Hillcrest Farm Lassie, 46940; third, A. W. & F. E. Fox on Selma's Dairy Girl, 39599; fourth, Wm. M. Jones on May Rose of Sunny Valley, 46135; fifth, Wilcox & Stubbs on Village of Lassie 3d, 46694.

Heifer Senior Calf—First, W. W. Marsh on Bopeep's Queen; second, A. W. & F. E. Fox on Florence May of Waukesha, 49216; third, Wm. M. Jones on Yeksa's Tops of Gold's Fannie 2d, 49103; fourth, W. W. Marsh on Hayes Snowdrop 7th, 10084; fifth, A. W. & F. E. Fox on Arabelle of Waukesha, 48911; sixth, Wm. M. Jones on Elizabeth's Beauty 2d, 48734.

Heifer Junior Calf—First, Wilcox & Stubbs on Graceful Princess; second, W. W. Marsh on September Morn, 50830; third, W. W. Marsh on Roehampton Deanie III, 10463; fourth, A. W. & F. E. Fox on Walter's Sequel Blanchflower, 49888; fifth, Wm. M. Jones on Cherub's Joy, 49367.

Champion Bull Two Years Old or Over—W. W. Marsh on Hayes Cherub II, 25147.

Senior and Junior Champion Guernsey Bulls, Hayes Cherub 2d, 25147, and Cherry's Memento, owned by W. W. Marsh, Waterloo.

Champion Bull Under Two Years Old—W. W. Marsh on Cherry's Memento, 27562.

Champion Cow Two Years Old or Over—W. W. Marsh on Deanie 16th, 8906.

Champion Heifer Under Two Years Old—W. W. Marsh on Bopeep's Queen.

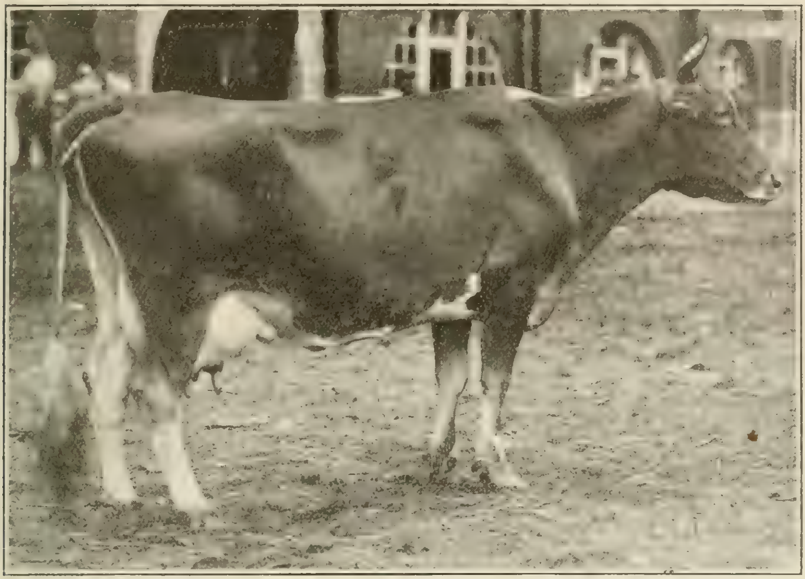
Grand Champion Bull, Any Age—W. W. Marsh on Hayes Cherub II, 25147.

Grand Champion Cow or Heifer, Any Age—W. W. Marsh on Deanie 16th, 8906.

Graded Herd—First, W. W. Marsh; second, A. W. & F. E. Fox; third, Wilcox & Stubbs; fourth, Chas. L. Hill; fifth, Wm. M. Jones.

Breeders' Young Herd—First, W. W. Marsh; second, Wm. M. Jones; third, A. W. & F. E. Fox; fourth, Chas. L. Hill; fifth, Wilcox & Stubbs.

Breeders' Calf Herd—First, Wm. M. Jones; second, Wilcox & Stubbs; third, W. W. Marsh.



Grand Champion Guernsey Cow, Deanie 16th, 8906, owned by W. W. Marsh of Waterloo.

Get of Sire—First, Chas. L. Hill; second, W. W. Marsh; third, A. W. & F. E. Fox; fourth, Wm. M. Jones; fifth, Wilcox & Stubbs; sixth, Wilcox & Stubbs.

Produce of Cow—First, W. W. Marsh; second, Chas. L. Hill; third, Wilcox & Stubbs; fourth, Wm. M. Jones; fifth, Wm. M. Jones; sixth, Wm. M. Jones.

Premier Breeder—W. W. Marsh.

SPECIAL PRIZE OFFERED BY THE AMERICAN GUERNSEY CATTLE CLUB.

Premier Breeder—W. W. Marsh.

AYRSHIRE.

EXHIBITORS.

Ferndell Farm, Ladysmith, Wisconsin; Adam Seitz, Waukesha, Wisconsin.

JUDGE..................HUGH G. VAN PELT, Waterloo, Iowa.

AWARDS.

Bull Three Years or Over—First, Adam Seitz on Imp. Bargenoch Gay Cavalier, 11981.

Bull Two Years, Under Three—First, Adam Seitz on Bargenoch Rising Star, 14843; second, Ferndell Farms, Inc., on Victor of Ladysmith, 14779.

Bull One Year Under Two—First, Adam Seitz on Cavalier's Fond Hope, 15944; second, Ferndell Farms, Inc., on Ferndell Victor, 16369.

Bull Senior Calf—First, Adam Seitz on Cavalier's Rising Tide, 16814; second, Adam Seitz on Cavalier's Kilnford Ringmaster, 16816.

Bull Junior Calf—First, Ferndell Farms, Inc., on Ferndell Goldfinder, 16905; second, Adam Seitz on Cavalier's Sultan Fashion, 16812.

Cow Four Years or Over—First, Adam Seitz on Imp. Kilnford Bell 3d, 30643; second, Adam Seitz on Imp. Hillhouse Maud, 2d; third, Adam Seitz on Imp. Kilnford Bell 4th, 32797; fourth, Adam Seitz on Imp. Carston Lady Mary Stuart, 35474; fifth, Ferndell Farms, Inc., on Dorothy Ann, 23674.

Cow Three Years, Under Four—First, Adam Seitz on Imp. Beuchan Tulip, 37663; second, Ferndell Farms, Inc., on Springhill Whinflower Hugo, 30668.

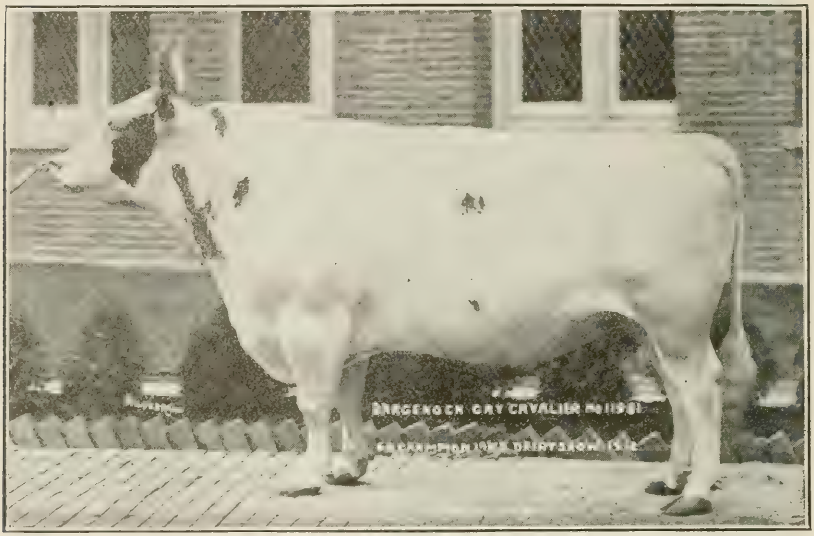
Heifer Two Years, Under Three—First, Adam Seitz on Bargenock Silver Pet, 32496; second, Adam Seitz; third, Ferndell Farms, Inc., on Victorine Fizzaway, 33933.

Heifer Senior Yearling—First, Adam Seitz on Cavalier's Violet, 35691; second, Adam Seitz on Cavalier's Wild Rose, 35693.

Heifer Junior Yearling—First, Adam Seitz on Cavalier's Rose Bowl, 37668; second, Ferndell Farms, Inc., on Value's Pride of Oak Valley, 36623.

Heifer Senior Calf—First, Adam Seitz on Cavalier's Maud; second, Adam Seitz on Cavalier's Bonnie Jean, 37669; third, Adam Seitz on Cavalier's Creampot, 37673.

Heifer Junior Calf—First, Adam Seitz on Cavalier's Duchess, 37372; second, Ferndell Farms, Inc., on Silver May of Ferndell, 37886; third, Ferndell Farms, Inc., on Nerine of Ferndell, 37887; fourth, Ferndell Farms on Ferndell Princess May, 37909.



Grand Champion Ayrshire Bull, Imp. Bargenoch Gay Cavalier, owned by Adam Seitz, Waukesha, Wisconsin.

Champion Bull Two Years Old or Over—Adam Seitz on Imp. Bargenoch Gay Cavalier, 11981.

Champion Bull Under Two Years Old—Adam Seitz on Cavalier's Fond Hope, 15944.

Champion Cow Two Years Old or Over—Adam Seitz on Imp. Kilnford Bell 3d, 30643.

Champion Heifer Under Two Years Old—Adam Seitz on Cavalier's Violet, 35691.

Grand Champion Bull, Any Age—Adam Seitz on Imp. Bargenoch Gay Cavalier, 11981.

Grand Champion Cow or Heifer, Any Age—Adam Seitz on Imp. Kilnford Bell 3d, 30643.

Graded Herd—First, Adam Seitz; second, Adam Seitz; third, Ferndell Farms, Inc.

Breeders' Young Herd—First, Adam Seitz.

Breeders' Calf Herd—First, Adam Seitz.

Get of Sire—First, Adam Seitz; second, Adam Seitz; third, Ferndell Farms.

Produce of Cow—First, Adam Seitz; second, Adam Seitz; third, Ferndell Farms.

Premier Exhibitor—Adam Seitz.

Premier Breeder—Adam Seitz.

BROWN SWISS.

EXHIBITORS.

Allynhurst Farm, Delavan, Wisconsin; Dahlen & Schmidt, Eldorado, Kansas; Hawthorn Farm, Lake County, Ill.

Judge..................Hugh G. Van Pelt, Waterloo, Iowa.

AWARDS.

Bull Three Years or Over—First, Allynhurst Farm on Myone Boy, 3120; second, Hawthorn Farm on Starlight Hector, 3566; third, Dahlen & Schmidt on Royal Lad, 2902.

Bull Two Years, Under Three—First, Hawthorn Farm on Prince George of Osceola, 4021; second, Dahlen & Schmidt on Glover, 3804.

Bull One Year, Under Two—First, Allynhurst Farm on Casper Brown of Allynhurst, 4077; second, Hawthorn Farm on Hawthorn Sultan, 3895; third, Dahleen & Schmidt on Modern Hero, 4131; fourth, Hawthorn Farm on Perfume's Lad, 4061.

Bull Senior Calf—First, Allynhurst Farm; second, Hawthorn Farms on Theodore R., 4299; third, Hawthorn Farms on Wilson, 4298; fourth, Allynhurst Farm.

Bull Junior Calf—First, Allynhurst Farm; second, Allynhurst Farm; third, Hawthorn Farm on Invincible, 4442.

Cow Four Years or Over—First, Hawthorn Farm on Hildare, 3970; second, Allynhurst Farm on Arlene, 2769; third, Allynhurst Farm on Belle of Grattan, 5144; fourth, Hawthorn Farm on Perfume, 3793; fifth, Allynhurst Farm on Myone Baby, 3378.

Cow Three Years, Under Four—First, Hawthorn Farm on Zell's Pet, 5201; second, Allynhurst Farm on Della C., 4989; third, Hawthorn Farm on Zell's Mascot, 5200; fourth, Dahlen & Schmidt on Miss Cornelia, 5006.

Heifer Two Years, Under Three—First, Allynhurst Farm on Show Girl of Allynhurst, 5545; second, Allynhurst Farm on Folie of Allynhurst, 5547; third, Dahlen & Schmidt on Princess Velva's Pet, 5472; fourth, Dahlen & Schmidt on Culalie, 5471; fifth, Hawthorn Farm on Lady A, 5417.

Heifer Senior Yearling—First, Allynhurst Farm on Colett of Allynhurst, 5896; second, Allynhurst Farm on Merry Maid of Allynhurst, 5897; third, Hawthorn Farm on Marion, 5815; fourth, Hawthorn Farm on Hawthorn Pink, 5661; fifth, Dahlen & Schmidt on Victoria Louise, 5995; sixth, Hawthorn Farm on Hawthorn Lily J, 5665.

Heifer Junior Yearling—First, Dahlen & Schmidt on Madaline, 5996; second, Hawthorn Farm on Caroline, 5817; third, Hawthorn Farm on Kashaw II, 5871; fourth, Hawthorn on Senorita, 5818; fifth, Allynhurst Farm on Betty, 6044.

Heifer Senior Calf—First, Hawthorn Farm on Santa Maria, 6022; second, Hawthorn Farm on Lucerne, 6103; third, Allynhurst Farm; fourth, Dahlen & Schmidt on Marie of Highland, 6508; fifth, Allynhurst Farm.

Heifer Junior Calf—First, Allynhurst Farm; second, Hawthorn Farm on Lady Marie, 6368; third, Allynhurst Farm; fourth, Dahlen & Schmidt on Pearl of Highland, 6506; fifth, Hawthorn Farm on Blossom, 6367; sixth, Hawthorn Farm on Kashaw III, 6403.

Champion Bull Two Years Old or Over—Allynhurst Farm on Myone Boy, 3120.

Champion Bull, Under Two Years Old—Allynhurst Farm on Casper Brown of Allynhurst, 4077.

Champion Cow Two Years Old or Over—Hawthorn Farm on Hildare, 3970.

Champion Heifer Under Two Years Old—Allynhurst Farm.

Grand Champion Bull, Any Age—Allynhurst Farm on Myone Boy, 3120.

Grand Champion Cow or Heifer, Any Age—Hawthorn Farm on Hildare, 3970.

Graded Herd—First, Allynhurst Farm; second, Hawthorn Farm; third, Dahlen & Schmidt; fourth, Hawthorn Farm.

Breeders' Young Herd—First, Allynhurst Farm; second, Hawthorn Farm; third, Dahlen & Schmidt.

Breeders' Calf Herd—First, Allynhurst Farm; second, Hawthorn Farm; second, Hawthorn Farm.

Get of Sire—First, Allynhurst Farm; second, Allynhurst Farm; third, Dahlen & Schmidt; fourth, Dahlen & Schmidt; fifth, Dahlen & Schmidt.

Produce of Cow—First, Allynhurst Farm; second, Allynhurst Farm; third, Dahlen & Schmidt; fourth, Allynhurst Farm; fifth, Dahlen & Schmidt.

Premier Exhibitor—Allynhurst Farm.

Premier Breeder—Allynhurst Farm.

SPECIAL PRIZE OFFERED BY THE BROWN SWISS CATTLE BREEDERS' ASSOCIATION.

Get of Sire—Allynhurst Farm.

FAT SHORT HORNS.

(PURE BREDS.)

EXHIBITORS.

Herr Bros. & Reynolds, Lodi, Wisconsin.; Wm. Herkelmann, Elwood, Iowa; C. A. Saunders, Manilla, Iowa.

JUDGE........................LESLIE SMITH, St. Cloud, Minn.

AWARDS.

Steer, Spayed or Martin Heifer Two Years and Under Three—First, Wm. Herkelmann on Roan Boy; second, C. A. Saunders on Oak Leaf; third, Herr Bros. & Reynolds on Flash Victor.

Steer, Spayed or Martin Heifer One Year and Under Two—First, C. A. Saunders on James Rofert; second, Herr Bros. & Reynolds on Dividend; third, Herr Bros. & Reynolds on Flash Victor 2d.

Steer, Spayed or Martin Heifer Under One Year—First, Wm. Herkelmann on Robin; second, C. A. Saunders on James Robert, Jr.; third, Herr Bros. & Reynolds on White Royal.

Champion Steer, Spayed or Martin Heifer—Wm. Herkelmann on Robin.

Group of Three, Owned by Exhibitor—First, Wm. Herkelmann; second, C. A. Saunders; third, Herr Bros. & Reynolds.

GRADE OR CROSS BRED.

EXHIBITORS.

W. E. Graham & Son, Prairie City, Iowa; C. B. Grimes, Winnebago, Minnesota; Herr Bros. & Reynolds, Lodi, Wisconsin; C. A. Saunders, Manilla, Iowa.

JUDGE......................LESLIE SMITH, St. Cloud, Minn.

AWARDS.

Steer, Spayed or Martin Heifer Two Years and Under Three—First, C. A. Saunders on Kansas Lad.

Steer, Spayed or Martin Heifer One Year and Under Two—First, C. A. Saunders on James; second, Herr Bros. & Reynolds on Politician; third, W. E. Graham & Son on Roan Charlie.

Steer, Spayed or Martin Heifer Under One Year—First, C. A. Saunders on John; second, C. B. Grimes on Rob Roy.

Champion Steer, Spayed or Martin Heifer—C. A. Saunders on James.

Group of Three, Owned by Exhibitor—First, C. A. Saunders.

FAT HEREFORD.

(PURE BRED.)

EXHIBITORS.

Wm. Andrews & Son, Morse, Iowa; E. M. Cassady & Son, Whiting, Iowa; W. H. Campbell & Son, Grand River, Iowa; Cyrus A. Tow, Norway, Iowa.

JUDGE........................PHIL C. LEE, San Angelo, Texas.

AWARDS.

Steer, Spayed or Martin Heifer Two Years, Under Three—First, Cyrus A. Tow on Fancy Beau, 80; second, E. M. Cassady & Son on Mike, 59; third, Wm. Andrews & Son on Pretender, 394864; fourth, E. M. Cassady & Son on Martin 2d, 91.

Steer, Spayed or Martin Heifer One Year, Under Two—First, Wm. Andrews & Son on Bright Boy, 106; second, Cyrus A. Tow on General, 114; third, E. M. Cassady & Son on Dan 2d, 135.

Steer, Spayed or Martin Heifer Under One Year—First, Wm. Andrews & Son on Bonnie Boy, 133; second, Cyrus A. Tow on Fairview Byron, 448709; third, E. M. Cassady & Son on Beau Vatican, 447945; fourth, W. H. Campbell & Son on Hobart, 463277.

Champion Steer, Spayed or Martin Heifer—Wm. Andrews & Son on Bright Boy, 106.

Group of Three, Owned by Exhibitor—First, Wm. Andrews & Son; second, Cyrus A. Tow; third, E. M. Cassady & Son.

GRADE OR CROSS BRED.

EXHIBITORS.

E. M. Cassady & Son, Whiting, Iowa; W. J. Davis, Jackson, Miss.; Cyrus A. Tow, Norway, Iowa.

JUDGE.......................PHIL C. LEE, San Angelo, Texas.

AWARDS.

Steer, Spayed or Martin Heifer Two Years, Under Three—First, W. J. Davis on James K. Vardaman; second, Cyrus A. Tow on Bob; third, Cyrus A. Tow; fourth, E. M. Cassady & Son on Tip Top.

Steer, Spayed or Martin Heifer One Year, Under Two—First, Cyrus A. Tow on Archie; second, E. M. Cassady & Son on Don's Lad.

Steer, Spayed or Martin Heifer Under One Year—First, Cyrus A. Tow on Lula; second, E. M. Cassady & Son on Jimmie.

Champion Steer, Spayed or Martin Heifer—T. J. Davis on James K. Vardaman.

Group of Three, Owned by Exhibitor—First, Cyrus A. Tow; second, E. M. Cassady & Son.

FAT ABERDEEN-ANGUS.

(PURE BRED.)

EXHIBITORS.

R. M. Anderson & Sons, Newell, Iowa; Carl A. Rosenfeld, Kelley, Iowa; W. J. Miller, Newton.

JUDGE............................SILAS IGO, Indianola, Iowa.

AWARDS.

Steer, Spayed or Martin Heifer Two Years, Under Three—First, R. M. Anderson & Sons on Riverdale Perfection; second, W. J. Miller on Carpenter's Hero 2d, 1825; third, Carl A. Rosenfeld on Steam Roller.

Steer, Spayed or Martin Heifer One Year and Under Two—First, R. M. Anderson & Sons on Archie; second, Carl A. Rosenfeld on Rosengift's Choice; third, W. J. Miller on Pio's Goods, 1095.

Steer, Spayed or Martin Heifer Under One Year—First, R. M. Anderson & Sons on Victor E.; second, Carl A. Rosenfeld on Rosengift Prince; third, W. J. Miller on Erin's Lad, 1873.

Champion Steer, Spayed or Martin Heifer—R. M. Anderson & Sons on Victor E.

Champion Group of Three Head, Owned by Exhibitor—First, R. M. Anderson & Sons; second, Carl A. Rosenfeld; third, W. J. Miller.

(GRADE OR CROSS BRED.)

Steer, Spayed or Martin Heifer Two Years and Under Three—First, W. J. Miller; second, Carl A. Rosenfeld on His Majesty.

Steer, Spayed or Martin Heifer One Year and Under Two—First, Carl A. Rosenfeld on Gay Prince; second, W. J. Miller on Ridge Lawn Laddie.

Steer, Spayed or Martin Heifer Under One Year—First, Carl A. Rosenfeld on His Highness; second, W. J. Miller on Ridge Lawn Pete.

Champion Steer, Spayed or Martin Heifer—W. J. Miller.

Champion Group of Three Head, Owned by Exhibitor—First, W. J. Miller; second, Carl A. Rosenfeld.

SWINE DEPARTMENT.

SUPERINTENDENT.............CYRUS A. TOW, Norway, Iowa.

POLAND CHINA.

EXHIBITORS.

A. J. Banks, Montour, Iowa; H. G. Boyer, Albia, Iowa; R. R. Blake, Dallas Center, Iowa; J. H. Cope, Carlisle, Iowa; C. C. Croxen, Atalissa, Iowa; C. W. Crees, Coon Rapids, Iowa; I. J. Conrad, Melbourne, Iowa; M. A. Dowling, Reasnor, Iowa; E. S. Dyas & Sons, Bellevue, Iowa; J. S. Fawcett & Sons, Springdale, Iowa; S. Fleming, Stuart, Iowa; S. L. Farlow, Ankeny, Iowa; J. O. Gring, Dallas Center, Iowa; Ray Howard, Ankeny, Iowa; Charles Howard, Ankeny, Iowa; F. H. Hassler, Manning, Iowa; Henry Bros. Co., Sheldon, Iowa; Joe Kramer, Elkader, Iowa; C. F. Keeling, Avon, Iowa; Chas. H. Krumm, Postville, Iowa; A. Kool, Cordova, Iowa; D. C. Lonergan, Florence, Neb.; A. J. Lytle, Oskaloosa, Iowa; Wm. Lentz, Ankeny, Iowa; G. F. Marshall, Monroe, Iowa; J. A. Mason, Carlisle, Iowa; Maurice V. Lonergan, Florence, Neb.; Wm. H. Molin, Monroe, Iowa; Isaac Overton, Knoxville, Iowa; D. H. Paul, Laurel, Iowa; F. G. Paul, Marshalltown, Iowa; J. L. Risler, Ames, Iowa; S. A. Roberts, Knoxville, Iowa; George Swallow, Booneville, Iowa; Mark I. Shaw, Monroe, Iowa; Fred A. Sievers, Audubon, Iowa; M. Shivers & Son, Knoxville, Iowa; W. L. Willey, Menlo, Iowa; E. O. Wilson, West Liberty, Iowa; F. F. & V. G. Warner, Bloomfield, Iowa.

JUDGE.......................CHAS. A. MARKER, Auburn, Ill.

AWARDS.

Boar Two Years or Over—First, Fred Sievers on Smooth Big Bones, 218543; second, C. W. Crees on Extra Long, 69044; third, D. C. Lonergan on Big Ursus, 70329; fourth, I. J. Conrad on Big Wonder Again, 209279; fifth, R. R. Blake on L's Big Bone, 196615; sixth, F. G. Paul on Queen's Model, 191343; seventh, D. C. Lonergan on Big Omaha, 65082.

Boar Eighteen Months, Under Two Years—First, M. Shivers & Son on Chief Jumbo; second, D. H. Paul on Prospect, 220607.

Boar One Year, Under Eighteen Months—First, W. E. Willey on Superba, 220623; second, I. J. Conrad on D. C. Victor, 220671; third, Wm. H. Nolin on Iowa's Improver, 219609; fourth, I. J. Conrad on Blue Valley Wonder, 220587; fifth, F. G. Paul on Big Bones Don, 204809; sixth, E. C. Wilson on The Patrician, 220441; seventh, Chas. H. Krumm on Standard Price, 210113.

Boar Six Months, Under One Year—First, A. Kool on Big Wonder, 220111; second, Henry Bros. Co. on Right Kind; third, W. E. Willey on Big Bones Son, Jr., 220025; fourth, A. J. Lytle on King Price Second, 220529; fifth, Henry Bros. Co. on Beat Kind; sixth, S. L. Farlow on Belle's Big Bone, 220491.

Boar Under Six Months—First, I. Overton; second, I. J. Conrad; third, I. J. Conrad; fourth, E. C. Wilson; fifth, J. S. Fawcett & Son; sixth, Henry Bros. Co.; seventh, D. C. Lonergan on Wonder K.

Sow Two Years or Over—First, D. H. Paul on Big Look, 453100; second, R. R. Blake on Lady Lentz, 480980; third, F. G. Paul on Mastodon's Modesty, 453710; fourth, F. G. Paul on Iowa Queen, 482662.

Sow Eighteen Months, Under Two Years—First, M. S. Shivers & Son on Wilcropt's Orphan; second, M. S. Shivers & Son on Chief's Lady Price; third, D. H. Paul on Miss Keep Sake 1st, 482428; fourth, F. G. Paul on Longfellow's Queen, 511042.

Sow One Year, Under Eighteen Months—First, D. C. Lonergan on Big Type Girl; second, I. J. Conrad on Long Betsy 2d, 514100; third, W. E. Willey on Big Lady A., 483106; fourth, W. E. Willey on Big Lady B., 483108; fifth, M.

Shivers & Son on Smooth Molten; sixth, R. R. Blake on Big Bone Beauty, 482996; seventh, D. H. Paul on Wonder Lady 1st, 482426.

Sow Six Months, Under One Year—First, Henry Bros. Co. on Best of 1914; second, M. Shivers on Halftons Tons Orphan; third, W. E. Willey on Annie Price 34th, 513166; fourth, S. L. Farlow on Big Bone Belle, 513952; M. Shivers on Halftons Tons Lady; sixth, J. S. Fawcett & Son on Faith, 513982; seventh, W. E. Willey on Annie Price thirty-fifth, 513166.

Sow Under Six Months—First, Henry Bros. Co.; second, D. H. Paul on Big Look 1st, 514124; third, M. Shivers & Son; fourth, Henry Bros. Co.; fifth, I. J. Conrad; sixth, F. G. Paul; seventh, E. C. Wilson.

Champion Boar Over One Year—Fred A. Sievers.

Champion Boar Under One Year—A Kool.

Champion Sow Over One Year—D. C. Lonergan.

Champion Sow Under One Year—Henry Bros.

Grand Champion Boar, Any Age—Fred A. Sievers.

Grand Champion Poland China Boar, 1668; owned by Fred A. Sievers, Audubon, Iowa.

Grand Champion Sow, Any Age—D. C. Lonergan.

Boar and Three Sows Over One Year—First, W. E. Willey; second, I. J. Conrad; third, M. Shivers & Son; fourth, D. H. Paul; fifth, F. G. Paul.

Boar and Three Sows Over One Year, Bred by Exhibitor—First, W. E. Willey; second, I. J. Conrad; third, D. H. Paul; fourth, F. G. Paul.

Boar and Three Sows Under One Year—First, Henry Bros. Co.; second, W. E. Willey; third, M. Shivers & Son; fourth, A. J. Lytle; fifth, F. G. Paul; sixth, M. Shivers & Son; seventh, D. H. Paul.

Boar and Three Sows Under One Year, Bred by Exhibitor—First, Henry Bros. Co.; second, W. E. Willey; third, M. Shivers; fourth, A. J. Lytle; fifth, F. G. Paul; sixth, D. H. Paul; seventh, M. Shivers.

Get of Sire—First, W. E. Willey; second, I. J. Conrad; third, Henry Bros. Co.; fourth, A. Kool; fifth, W. E. Willey; sixth, M. Shivers & Son; seventh, F. G. Paul.

Produce of Sow—First, W. E. Willey; second, I. J. Conrad; third, Henry Bros. Co.; fourth, A. Kool; fifth, M. Shivers & Son; sixth, F. G. Paul; seventh, D. H. Paul.

POLAND CHINA FUTURITIES.

(SPRING PIGS.)

Boars—First, Isaac Overton, Knoxville, Iowa, on Expansion Boy, 221113; second, E. C. Wilson, West Liberty, Iowa, on Combination You'll Do, 220447; third, J. S. Fawcett & Son, Springdale, Iowa, on Jasper, 221425; fourth, Henry Bros., Sheldon, Iowa, on Matchless Chief, 220843; fifth, S. A. Roberts, Knoxville, Iowa, on Jumbo King, 220577; sixth, S. A. Roberts, Knoxville, Iowa, on Big Price, 220579; seventh, A. J. Lytle, Oskaloosa, Iowa, on King Bone, 221871.

Sows—First, Henry Bros., Sheldon, Iowa, on A Matchless Miss, 514606; second, D. H. Paul, Laurel, Iowa, on Big Look 1st, 514124; third, M. Shivers, Knoxville, Iowa, on Smooth Lady, 516418; fourth, Henry Bros., Sheldon, Iowa, on A Matchless Queen, 514612; fifth, S. A. Roberts, Knoxville, Iowa, on Lady Look, 514090; sixth, F. G. Paul, Marshalltown, Iowa, on Big Modesty 4th, 514114; seventh, E. C. Wilson, West Liberty, Iowa, on Miss You'll Do, 513878.

Litter—First, Henry Bros., Sheldon, Iowa; second, E. C. Wilson, West Liberty, Iowa; third, D. H. Paul, Laurel, Iowa; fourth, S. A. Roberts, Knoxville, Iowa; fifth, J. S. Fawcett & Son, Springdale, Iowa; sixth, F. G. Paul, Marshalltown, Iowa; seventh, A. J. Lytle, Oskaloosa, Iowa.

(FALL PIGS.)

Boars—First, A. Kool, Cordova, Iowa, on Big Wonder, 220111; second, Henry Bros., Sheldon, Iowa, on Right Kind, 220839; third, A. J. Lytle, Oskaloosa, Iowa, on King Price, 220527; fourth, S. L. Farlow, Ankeny, Iowa, on Belle's Big Bone, 220491; fifth, Henry Bros., Sheldon, Iowa, on The Kind, 220841; 6th, F. G. Paul, Marshalltown, Iowa, on Modesty Longfellow, 217607.

Sows—First, Henry Bros., Sheldon, Iowa, on Best of 1914, 514602; second, M. Shivers, Knoxville, Iowa, on Fancy Lady, 516416; third, S. L. Farlow, Ankeny, Iowa, on Big Bone Belle, 513952; fourth, M. Shivers, Knoxville, Iowa, on Half Ton's Orphan 2d, 516402; fifth, M. Shivers, Knoxville, Iowa, on Half Ton's Orphan 1st, 516400; sixth, J. S. Fawcett & Son, Springdale, Iowa, on Faith, 513982.

DUROC JERSEY.

EXHIBITORS.

George F. Abbott, Menlo, Iowa; H. I. Allen, Russell, Iowa; A. P. Alsin, Boone, Iowa; E. A. Bonham, Macksburg, Iowa; F. B. Butterfield, Ankeny, Iowa; F. P. Bieth & Son, Joliet, Ill.; H. I. Branson, West Branch, Iowa; M. C. Cramer, Monroe, Iowa; Frank N. Crow, Oxford, Iowa; Fred S. Castle, Joy, Ill.; Arthur Dearinger, Reasnor, Iowa; E. W. Day & Son, Kellogg, Iowa; S. P. Freed, Ames, Iowa; J. H. Faris, New Providence, Iowa; John Fennema, Monroe, Iowa; J. W. Garis, Rhodes, Iowa; Myles Harkins, Pleasantville, Iowa; Hanks & Bishop, New London, Iowa; John S. Hooks, Blair, Neb.; Carl Hutchins, Algona, Iowa; R. J. Harding, Macedonia, Iowa; E. G. Hirst, West Branch, Iowa; C. B. Jarnagin & Son, Monroe, Iowa; W. A. Kellogg, Le Grand, Iowa; A. E. Long, Mt. Pleasant, Iowa; Grant Lynn, Spirit Lake, Iowa; C. W. McDermott, Wiota, Iowa; R. G. McDuff, Monroe, Iowa; H. C. Nichols, West Liberty, Iowa; D. Nauman & Son, West Liberty, Iowa; Frank D. Nelson, Harlan, Iowa; Elmer Reed, New London, Iowa; Geo. E. Richardson, Gilman, Iowa; C. A. Rasmussen, Kimballton, Iowa; H. B. Staples, Glidden, Iowa; W. B. Shaw, Monroe, Iowa; I. E. Stickelman, Clarinda, Iowa; I. W. Stewart & Son, Kennard, Neb.; S. W. Swanson, Stanton, Iowa; John Thompson, Lake City, Iowa; O. E. Wilcox, Deep River, Iowa; Waltemeyer Bros., Melbourne, Iowa; Grant White, Afton, Iowa; Hosea Wilson, Blair, Neb.; I. J. Wilson, West Branch, Iowa; F. S. Vandershyde, West Concord, Minn.; W. H. & A. D. Van Meter, Williamsville, Ill.; Fred H. Swan, Missouri Valley, Iowa.

JUDGE............................A. J. LOVEJOY, Roscoe, Ill.

AWARDS.

Boar Two Years or Over—First, Waltemeyer Bros. on Golden Model Critic, 55737a; second, John Thompson on Golden Prince, 125991; third, Waltemeyer Bros. on I Am Golden Model 2d, 133821m; fourth, J. W. Garis; fifth, A. P.

Alsin on A. P.'s Golden W., 158685; sixth, F. S. Vanderhyde & Son on Van's Crimson, 102553; seventh, S. P. Freed on Wonderful Crimson Again, 111835.

Boar One Year, Under Eighteen Months—First, W. H. & A. O. Van Meter on Illustrator's King, 55891; second, F. W. Swan on Prince Defender; third, Waltemeyer Bros. on I Am Golden Model Again, 158851; fourth, Waltemeyer Bros. on I Am Golden Model 31st; fifth, A. P. Alsin on College Col., 154483; sixth, H. B. Staples on Orange Chief; 158737; seventh, H. S. Allen.

Boar Eighteen Months, Under Two Years—First, Waltemeyer Bros. on Long Wonder, 139273; second, I. E. Steckelman on Crimson Echo, 147949; third, I. J. Wilson on Chief Gano; fourth E. W. Day & Son on Elrosa Chief, 140205; fifth, J. H. Faris on Colonel Jim, 152419; sixth, F. P. Bieth & Son on Our Volunteer, 47913; seventh, John Thompson on Valley King 2d, 146173.

Boar Six Months, Under One Year—First, Waltemeyer Bros. on I Am Golden Model 4th, 158859; second, Waltemeyer Bros. on I Am Golden Model 6th, 158849; third, Hanks & Bishop on Aresto; fourth, F. S. Vanderhyde & Son on Van's Crimson 2d, 157677; fifth, Arthur Dearinger on Smooth Gano; sixth, W. H. & A. D. Van Meter on The Dude, 55905; seventh, F. P. Bieth & Son on Drafter, 55763.

Boar Under Six Months—First, D. Nauman; second, F. S. Vanderhyde & Son; third, F. S. Vanderhyde & Son; fourth, Hosea Wilson; fifth, S. M. Stewart & Son; sixth, J. S. Fawcett & Son; seventh, H. B. Staples.

Sow Two Years or Over—First, Waltemeyer Bros. on Golden Queen 35th, 341918; second, F. S. Vanderhyde & Son on Crimson Bessie, 361946; third, R. J. Harding on Harding's Medium, 323982; fourth, Grant Lynn on Nellie Advancer, 361036; fifth, W. H. & A. D. Van Meter on Fond Memory 2nd; sixth, H. B. Staples on Mabel, 336816; seventh, F. P. Bieth & Son on Miss Janette.

Sow Eighteen Months, Under Two Years—First, E. Reed; second, W. H. & A. D. Van Meter on Miss Illustrator, 125956; third, Waltemeyer Bros. on Golden Queen 39th, 362584; fourth, Grant Lynn on Ruby Lady, 361026; fifth, F. P. Bieth & Son on Crimson Princess, 125684; sixth, W. H. & A. D. Van Meter on Mandylee, 125988; seventh, Waltemeyer Bros. on Golden Queen 44th, 404856.

Sow One Year, Under Eighteen Months—First, R. J. Harding on Golden Lady, 404572; second, D. Nauman on Iowa Model, 405118; third, D. Nauman on Model Lady 5th, 405406; fourth, Waltemeyer Bros. on Golden Lady, 125572a; fifth, Waltemeyer Bros. on Golden Queen 41st, 362588; sixth, W. H. & A. D. Van Meter on Ida M. 2d, 125968; seventh, R. J. Harding on R. J.'s Medium, 404562.

Sow Six Months, Under One Year—First, Waltemeyer Bros. on Golden Lady 4th, 404862; second, W. H. & A. D. Van Meter on Miss Magnolia 1st, 125958; third, Grant Lynn on Miss Model II, 402716; fourth, D. Nauman on Model 2d, 405110; fifth, F. S. Vanderhyde & Son on Miss Crimson 1st, 401910; sixth, D. Nauman on Model, 405112; seventh, Grant Lynn on Miss Model 2d, 402714.

Sow Under Six Months—First, D. Nauman; second, F. S. Vanderhyde & Son; third, H. B. Staples; fourth, E. G. Heist; fifth, Waltemeyer Bros.; sixth, J. S. Fawcett & Son.

Champion Boar Over One Year—Waltemeyer Bros. on Golden Model Critic.

Champion Boar Under One Year—Waltemeyer Bros. on I Am Golden Model 4th.

Champion Sow Over One Year—Waltemeyer Bros.

Champion Sow Under One Year—Waltemeyer Bros.

Grand Champion Boar, Any Age—Waltemeyer Bros.

Grand Champion Sow, Any Age—Waltemeyer Bros.

Boar and Three Sows Over One Year—First, Waltemeyer Bros.; second, Waltemeyer Bros.; third, W. H. & A. D. Van Meter; fourth, F. S. Vanderhyde & Son; fifth, W. H. & A. D. Van Meter.

Boar and Three Sows Over One Year, Bred by Exhibitor—First, Waltemeyer Bros.; second, W. H. & A. D. Van Meter; third, Waltemeyer Bros.; fourth, F. S. Vanderhyde & Son; fifth, W. H. & A. D. Van Meter.

Boar and Three Sows Under One Year—First, Waltemeyer Bros.; second, W. H. & A. D. Van Meter; third, D. Nauman; fourth, Grant Lynn; fifth, F. S. Vanderhyde & Son; sixth, S. W. Swanson.

Champion Duroc Jersey Boar, Grand Model Critic, owned by Waltemeyer Bros., Melbourne, Iowa.

Boar and Three Sows Under One Year, Bred by Exhibitor—First, Waltemeyer Bros.; second, W. H. & A. D. Van Meter; third, D. Nauman; fourth, Grant Lynn; fifth, F. S. Vanderhyde & Son; sixth, S. W. Swanson.

Get of Sire—First, Waltemeyer Bros.; second, Waltemeyer Bros.; third, W. H. & A. D. Van Meter; fourth, F. S. Vanderhyde & Son; fifth, D. Nauman; sixth, W. H. & A. D. Van Meter; seventh, Grant Lynn.

Produce of Sow—First, D. Nauman; second, W. H. & A. D. Van Meter; third, F. S. Vanderhyde & Son; fourth, Grant Lynn.

Boar and Three Sows Over One Year, Bred by Exhibitor—Waltemeyer Bros.

Boar and Three Sows Under One Year, Bred by Exhibitor—Waltemeyer Bros.

CHESTER WHITE.

EXHIBITORS.

A. F. Anderson, Selma, Iowa; Raymond E. Brown, Dunlap, Iowa; Maurice F. Black, Scribner, Neb.; W. T. Barr, Ames, Iowa; B. M. Boyer & Son, Farmington, Iowa; Reed Crawford, Libertyville, Iowa; W. H. Dunbar, Jefferson, Iowa; George W. De Bar, Aurora, Iowa; J. L. Dickerson, Knoxville, Iowa; F. G. Dickerson, Knoxville, Iowa; F. W. La Doux, Spirit Lake, Iowa; Joe W. Edgar, New London, Iowa; R. F. Fantz, New Hampton, Iowa; W. M. Fantz & Son, New Hampton, Iowa; N. L. Fuller, What Cheer, Iowa; Wm. A. Hoover, Oskaloosa, Iowa; O. H. Jarnagin, Monroe, Iowa; George A. Lasley, Selma, Iowa; J. H. Lachmiller, Spirit Lake, Iowa; D. M. Lewis, Geneseo, Ill.; Will Michael, Selma, Ill.; J. H. & Duke Mahannah, North English, Iowa; Edwin M. Nolan, Monroe, Iowa; E. L. Nagle & Son, Deep River, Iowa; J. T. Perry, Selma, Iowa; Fred Pieplow, Aurora, Iowa; G. O. Satre, Jewell, Iowa; J. A. Scott, Monroe, Iowa; A. B. Somerville, Monroe, Iowa; D. H. Sleichter & Sons, Riverside, Iowa; P. H. Sheridan, Vail, Iowa; S. M. Thompson, Birmingham, Iowa; Jesse L. White, Galena, Ill.; E. L. Laring, Reasnor, Iowa; Wm. Whitted, Monroe, Iowa; M. W. Young, Ankeny, Iowa.

JUDGE............................N. H. GENTRY, Sedalia, Mo.

AWARDS.

Boar Two Years or Over—First, W. T. Barr on Wildwood Prince, 16087; second, A. B. Summerville on Jumbo Wonder, 26169; third, F. W. La Doux on Gold Coin, 21439; fourth, G. O. Satre on White Giant, 24037; fifth, R. F. Fantz on Chief O. K., 23985; sixth, E. L. Nagle & Son on Col. Evans, 21623; seventh, B. M. Boyer & Sons on Iowa First, 16749.

Boar Eighteen Months, Under Two Years—First, P. H. Sheridan, on Western Winner, 24085; second, R. F. Fantz on Perfector, 26107; third, F. W. La Doux on Honest Abe, 25901; fourth, Will Michael on Good Enough, 16971; fifth, Wm. A. Hoover on Pilot Wonder, 27371; sixth, R. F. Fantz on Model Goods, 23981.

Boar One Year, Under Eighteen Months—First, W. T. Barr on Elmo Chief, 28111; second, A. B. Sommerville on Champion Boy, 27167; third, E. L. Nagle on Nagle's Kind, 17063; fourth, F. W. La Doux on Victor Boy, 23757; fifth, R. F. Fantz on Fairview Contractor, 26099; sixth, Wm. A. Hoover on Indiana Boy, 27369; seventh, P. H. Sheridan on Big Chief, 28185.

Boar Six Months, Under One Year—First, E. L. Nagle & Son on Sensation, 17467; second, E. L. Nagle & Son on Good, 17465; third, W. H. Dunbar on Peacemaker, 27811; fourth, D. H. Lewis on Elmo Chief 2d, 28107; fifth, J. L. Dickerson on Public Favor, 27981; sixth, F. W. La Doux on Comet; seventh, J. H. & Duke Mahannah on Combination Parody, 27977.

Boar Under Six Months—First, J. H. & Duke Mahannah; second, W. H. Dunbar; third, Leonard Willey; fourth, B. M. Boyer & Sons; fifth, J. H. & Duke Mahannah; sixth, E. L. Nagle & Son; seventh, F. W. La Doux.

Sow Two Years or Over—First, Raymond E. Brown on Myrtle B., 49152; second, W. A. Hoover on Fancy, 62426; third, B. M. Boyer & Sons on Bloom First, 28336; fourth, W. T. Barr on Miss Lenora, 51064; fifth, R. F. Fantz on Glory, 53434; sixth, W. A. Hoover on Hawkeye Belle 3d, 62430; seventh, Jesse L. White on Miss Perfection, 54486.

Sow Eighteen Months, Under Two Years—First, R. F. Fantz on Queen 3d, 62344; second, Raymond E. Brown on R. E.'s Choice, 53218; third, F. W. La Doux on White Queen; fourth, Raymond E. Brown on Dunlap Lassie, 53220; fifth, Wm. A. Hoover on Lilly C. 3d, 60848; sixth, Wm. A. Hoover on Lilly C. 2d, 60846; seventh, R. F. Fantz on White Rose, 53588.

Sow One Year, Under Eighteen Months—First, W. T. Barr on Better Goods, 62494; second, J. L. Dickerson on Lenora's Premium, 55716; third, E. L. Nagle & Son on Young Fancy, 28650; fourth, R. F. Fantz on Glory's Choice, 62350; fifth, G. O. Satre on Mercy, 62580; sixth, Raymond E. Brown on Dunlap's Princess, 62510; seventh, F. W. La Doux on La Doux's Pride.

Sow Six Months, Under One Year—First, M. F. Black on Beauty, 62188; second, M. F. Black on Fancy Lady, 62190; third, Raymond E. Brown on Perfection Lady Again, 62504; fourth, W. H. Dunbar on Bonnie Belle, 61876; fifth, W. H. Dunbar on Bonnie, 61874; sixth, D. H. Lewis on Elmo Pride, 62484; seventh, R. F. Fantz on Iowa Lady, 62358.

Sow Under Six Months—First, E. L. Nagle; second, W. T. Barr; third, R. F. Fantz on Panama Gift; fourth, Elvin M. Nolan; fifth, Raymond E. Brown; sixth, J. H. & Duke Mahannah; seventh, J. H. & Duke Mahannah.

Champion Boar Over One Year—W. T. Barr on Wildwood Prince.

Champion Boar Under One Year—J. H. & Duke Mahannah.

Champion Sow Over One Year—R. E. Brown.

Champion Sow Under One Year—M. F. Black.

Grand Champion Boar, Any Age—W. T. Barr on Wildwood Prince.

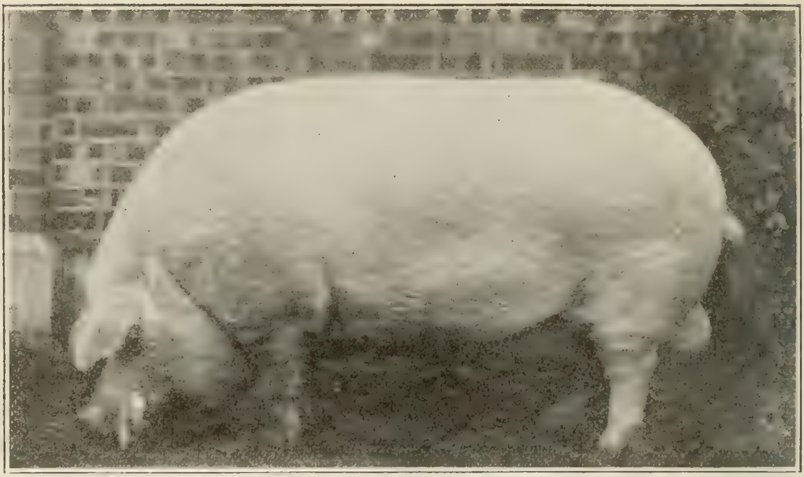
Grand Champion Sow, Any Age—M. F. Black on Beauty.

Boar and Three Sows Over One Year—First, W. T. Barr; second, Raymond E. Brown; third, G. O. Satre; fourth, Wm. A. Hoover; fifth, R. F. Fantz; sixth, Wm. A. Hoover.

Boar and Three Sows Over One Year, Bred by Exhibitor—First, W. T. Barr; second, Wm. A. Hoover; third, R. F. Fantz; fourth, Wm. A. Hoover.

Boar and Three Sows Under One Year—First, M. F. Black; second, W. H. Dunbar; third, Wm. A. Hoover; fourth, W. T. Barr; fifth, D. H. Lewis; sixth, R. F. Fantz; seventh, Raymond E. Brown.

Boar and Three Sows Under One Year, Bred by Exhibitor—First, M. F. Black; second, W. H. Dunbar; third, Wm. A. Hoover; fourth, W. T. Barr; fifth, D. H. Lewis; sixth, R. F. Fantz; seventh, Raymond Brown.



Grand Champion Chester White Boar, Wildwood Prince, owned by W. T. Barr, Ames, Iowa.

Get of Sire—First, M. F. Black; second, W. T. Barr; third, Wm. A. Hoover; fourth, R. F. Fantz; fifth, D. H. Lewis; sixth, J. H. & Duke Mahannah; seventh, Wm. A. Hoover.

Produce of Sow—First, M. F. Black; second, Wm. A. Hoover; third, W. T. Barr; fourth, R. F. Fantz; fifth, D. H. Lewis; sixth, J. H. & Duke Mahannah; seventh, W. H. Dunbar.

BERKSHIRE.

EXHIBITORS.

The Farmer Farm, Farmington, Minn.; Nelle Fabyan, Geneva, Ill.; E. Fitz, Melbourne, Iowa; C. B. Grimes, Winnebago, Minn.; Iowana Farms, Davenport, Iowa; Sutton Farm, Lawrence, Kansas.

JUDGE.............................N. H. GENTRY, Sedalia, Mo.

AWARDS.

Boar Two Years or Over—First, Sutton Farm on Duke's Baron 8th, 151368; second, Iowana Farms on Rival's Iowana Baron 2d, 172536; third, The Farmer Farm on Premier's Master 5th, 146091; fourth, Iowana Farms on Baron Premier 102d, 172300; fifth, Nelle Fabyan on His Lordship of Riverbank, 183075; sixth, Sutton Farm on Berrytown Duke Jr.'s Last, 195450; seventh, E. E. Fitz on Nick Rival, 183080.

Boar Eighteen Months, Under Two Years—First, The Farmer Farm on Gillieas Knight Errant, 178799; second, Nelle Fabyan on Duke of Riverbank, 178308; third, Sutton Farm on Robinhood Style, 195450; fourth, Iowana Farms on Ames Rival 36th, 176400.

Boar One Year, Under Eighteen Months—First, Iowana Farms on Iowana's Royal Champion 2d, 184350; second, Sutton Farm on Classy Robinhood, 195414; third, Iowana Farms on Ames Rival 51st, 190000; fourth, Nelle Fabyan on The Shah of Riverbank, 181827; fifth, Nelle Fabyan on The Kaiser of Riverbank, 181826; sixth, The Farmer Farm on Rubicel Champion, 188201.

Boar Six Months, Under One Year—First, The Farmer Farm on Bandmaster 2d, 194423; second, Iowana Farms on Iowana Baron Premier, 188526; third C. B. Grimes on Forest Grove Rival; fourth, Sutton Farm on Beau Robinhood, 195456; fifth, The Farmer Farm on Starlight 15th, 194126; sixth, Iowana Farms on Iowana Artful Rival, 188495; seventh, Nelle Fabyan on Prince George of Riverbank.

Boar Under Six Months—First, The Farmer Farm; second, Sutton Farm; third, C. B. Grimes on Forest Grove Rival 7th; fourth, The Farmer Farm; fifth, Iowana Farm; sixth, Iowana Farm; seventh, C. B. Grimes on Forest Grove Rival 8th.

Sow Two Years or Over—First, Iowana Farms on Rival's Lady 33d, 152787; second, Iowana Farms on Rookwood Lady 52d, 178094; third, The Farmer Farm on Laughing Water 15th, 153773; fourth, C. B. Grimes on Rival Lady 34th, 152788; fifth, Nelle Fabyan on Queen of Riverbank, 178307.

Sow Eighteen Months, Under Two Years—First, Iowana Farms on Iowana Peaceful 2d, 179237; second, The Farmer Farm on Knight Errant's Lucindy 2d, 178801; third, Iowana Farms on Iowana Peaceful 4th, 179239.

Sow One Year, Under Eighteen Months—First, Iowana Farms on Iowana's Royal Lady, 184353; second, The Farmer Farm on Lovely Lass 2d, 191549; third, The Farmer Farm on Duke's Last 2d, 194425; fourth, C. B. Grimes on Forest Grove Laurel; fifth, Iowana Farms on Rival's Iowana Lemore, 184356; sixth, Nelle Fabyan on The Czarina of Riverbank, 181830; seventh, Nelle Fabyan on The Viscountess of Riverbank, 181829.

Sow Six Months, Under One Year—First, C. B. Grimes on Forest Grove Laurel II; second, Iowana Farms on Rival's Iowana Empress, 188513; third, The Farmer Farm on Lady Lightfoot 5th, 194431; fourth, Iowana Farms on Rival's Iowana Empress 2d, 188514; fifth, Sutton Farm on Lady Brummel Robinhood, 195453; sixth, The Farmer Farm on Lady Twilight, 194427; seventh, Sutton Farm on Lady Brummel Robinhood, 195454.

Sow Under Six Months—First, The Farmer Farm; second, The Farmer Farm; third, Sutton Farm; fourth, Sutton Farm; fifth, Iowana Farms; sixth, C. B. Grimes; seventh, Iowana Farms.

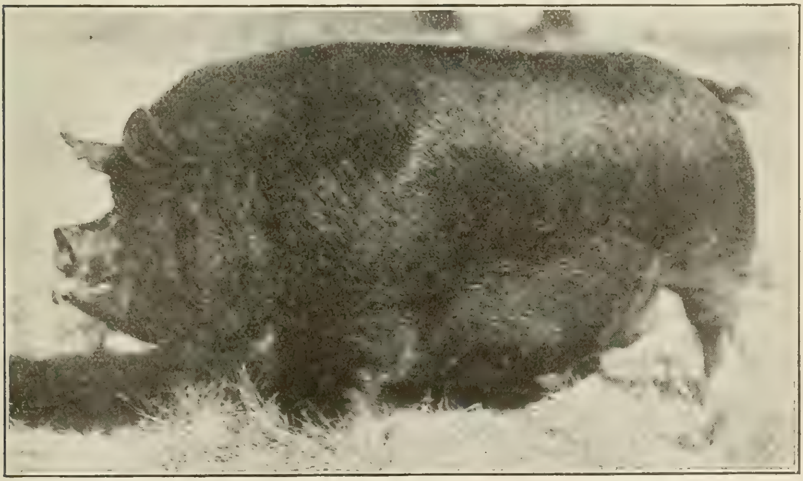
Champion Boar Over One Year—Sutton Farm on Duke's Bacon 8th.

Champion Boar Under One Year—The Farmer Farm on Bandmaster 2d.

Champion Sow Over One Year—Iowana Farms on Rival's Lady 33d.

Champion Sow Under One Year—C. B. Grimes on Forest Grove Laurel.

Grand Champion Boar, Any Age—Sutton Farm on Duke's Bacon 8th.



Grand Champion Berkshire Boar, Duke's Bacon 8th, owned by the Sutton Farm, Laurence, Kansas.

Grand Champion Sow, Any Age—Iowana Farms on Rival's Lady 33d.

Boar and Three Sows Over One Year—First, Iowana Farms; second, The Farmer Farm; third, Iowana Farms; fourth, Nelle Fabyan.

Boar and Three Sows Over One Year, Bred by Exhibitor—First, Iowana Farms; second, Nelle Fabyan.

Boar and Three Sows Under One Year—First, The Farmer Farm; second, Iowana Farms; third, C. B. Grimes; fourth, Sutton Farm.

Boar and Three Sows Under One Year, Bred by Exhibitor—First, The Farmer Farm; second, Iowana Farms; third, C. B. Grimes; fourth, Sutton Farm.

Get of Sire—First, Iowana Farms; second, The Farmer Farm; third, Iowana Farms; fourth, Sutton Farm; fifth, C. B. Grimes; sixth, Nelle Fabyan.

Produce of Sow—First, C. B. Grimes; second, Sutton Farm; third, Nelle Fabyan.

HAMPSHIRE.

EXHIBITORS.

Chas. E. Bunn & Son, Peoria, Ill.; C. A. Brook, Washington, Iowa; J. E. Beckendorf, Walnut, Iowa; C. S. Bratt, Arapahoe, Neb.; Ed Dooley, Selma, Iowa; Carey Feagins, Bussey, Iowa; Ralph Hutchins, Algona, Iowa; Glen G. Hayes, Washington, Iowa; Clayton Messenger, Keswick, Iowa; F. T. Quire, Sully, Iowa; Art Shaw, Oskaloosa, Iowa; John N. Vigars, Eldora, Iowa; Russell Yates, Palo, Iowa; W. F. Yingst, State Center, Iowa.

JUDGE......................WILSON ROME, Davenport, Iowa.

AWARDS.

Boar Two Years or Over—First, Chas. E. Bunn on Bunn's Pattern, 21481; second, Russell Yates on Coffee Pot, 13089; third, John N. Vigars on Monticello King, 5633; fourth, J. E. Beckendorf on De Kalb's King 55th, 13965; fifth, Glen G. Hayes on Union Leader, 10940; sixth, Ralph Hutchins on Prince Kossuth, 20453; seventh, F. T. Quire on Bob Evans, 12015.

Boar Eighteen Months, Under Two Years—First, C. A. Brooks on Brook's Choice; second, Russell Yates on Palo Boy, 14805; third, Clayton Messenger on Bob Riley, 16651; fourth, W. F. Yingst on Joe Cracker Jack, 16617; fifth, Clayton Messenger on Clayton's Choice, 20967; sixth, J. E. Beckendorf on DeKalb's King 63d, 17703.

Boar One Year, Under Eighteen Months—First, Carey Feagins on Bud's Best 2d, 16981; second, Clayton Messenger on Messenger's Choice, 15791; third, Clayton Messenger on Blythedale Jim 3d, 15849; fourth, John N. Vigars on Pride of Grundy, 18491; fifth, C. A. Brook on Kirk Anthony.

Boar Six Months, Under One Year—First, Clayton Messenger on Iowa Boy 2d, 19943; second, Russell Yates; third, Carey Feagins on Tom Keen; fourth, C. A. Brook; fifth, C. S. Bratt on John, 20977; sixth, F. T. Quire on Exhaneion, 20987; seventh, Roy E. Fisher.

Boar Under Six Months—First, Clayton Messenger on Scottish Boy, 21395; second, Russell Yates; third, W. F. Yingst; fourth, F. T. Quire on Good Time, 20993; fifth, Glen G. Hayes; sixth, Roy E. Fisher; seventh, Roy E. Fisher.

Sow Two Years or Over—First, Russell Yates on Gloria 2d, 12464; second, Clayton Messenger on Annie Bowers, 19108; third, Clayton Messenger on Coinita, 19104; fourth, C. A. Brook; fifth, Roy E. Fisher; sixth, F. T. Quire on Perfection Best, 8000; seventh, Ralph Hutchins on Louisa Princess, 38376.

Sow Eighteen Months, Under Two Years—First, Clayton Messenger on Ella Crone, 27302; second, Clayton Messenger on Evelyn, 28668; third, C. A. Brook on Lady Courtland; fourth, Russell Yates on Clover Queen, 26784; fifth, Roy E. Fisher; sixth, Roy E. Fisher; seventh, J. E. Beckendorf.

Sow One Year, Under Eighteen Months—First, Roy E. Fisher; second, Clayton Messenger on Pauline, 34274; third, C. A. Brook; fourth, Clayton Messenger on Pansy Girl, 34288; fifth, Russell Yates on Palo Queen, 31522; sixth, Chas. E. Bunn & Son on Miss Dudie, 32632; seventh, Roy E. Fisher.

Sow Six Months, Under One Year—First, Roy E. Fisher; second, Clayton Messenger on Lotta M., 40560; third, Clayton Messenger on Nancy Nan, 40562; fourth, Russell Yates on Miss Susie, 41254; fifth, C. A. Brook; sixth, John N. Vigars; seventh, Carey Feagins on Cedar Valley Queen 1st, 40540.

Sow Under Six Months—First, Roy E. Fisher; second, C. A. Brook; third, Roy E. Fisher; fourth, Clayton Messenger on Scottish Girl, 40570; fifth, Art Shaw on Fair Wonder, 48728; sixth, Chas. E. Bunn on Bunn's Gem, 40854; seventh, Chas. E. Bunn on Bunn's Ruby, 40856.

Champion Boar Over One Year—Chas. E. Bunn & Son on Bunn's Pattern.

Champion Boar Under One Year—Clayton Messenger on Iowa Boy.

Champion Sow Over One Year—Russell Yates on Gloria 2d.

Champion Sow Under One Year—Roy E. Fisher.

Grand Champion Boar, Any Age—Chas E. Bunn & Son on Bunn's Pattern.

Grand Champion Sow, Any Age—Russell Yates on Gloria 2d.

Boar and Three Sows Over One Year—First, Russell Yates; second, C. A. Brook; third, Clayton Messenger; fourth, Clayton Messenger; fifth, Roy E. Fisher; sixth, Roy E. Fisher.

Boar and Three Sows Over One Year, Bred By Exhibitor—First, Clayton Messenger; second, Clayton Messenger; third, Roy E. Fisher.

Boar and Three Sows Under One Year—First, Clayton Messenger; second, C. A. Brook; third, Russell Yates; fourth, R. E. Fisher; fifth, R. E. Fisher; sixth, Clayton Messenger; seventh, W. F. Yingst.

Boar and Three Sows Under One Year, Bred by Exhibitor—First, Clayton Messenger; second, C. A. Brook; third, Russell Yates; fourth, Roy E. Fisher; fifth, Roy E. Fisher; sixth, Clayton Messenger; seventh, W. F. Yingst.

First, Hampshire Get of Sire, owned by Clayton Messenger, Keswick, Iowa.

Get of Sire—First, Clayton Messenger; second, Clayton Messenger; third, C. A. Brook; fourth, Roy E. Fisher; fifth, Russell Yates; sixth, Roy E. Fisher; seventh, F. T. Quire.

Produce of Sow—First, Clayton Messenger; second, Clayton Messenger; third, Roy E. Fisher; fourth, C. A. Brook; fifth, Roy E. Fisher; sixth, F. T. Quire; seventh, Glen G. Hayes.

LARGE YORKSHIRE.

EXHIBITORS.

F. M. Buck, Waukee, Iowa; B. F. Davidson, Menlo, Iowa; T. I. Manley, Guthrie Center, Iowa.

JUDGE............................C. C. ROUP, Kalona, Iowa.

Boar Two Years or Over—First, F. M. Buck on Dan D. Stuff, 17135; second, T. I. Manley on Dan D. Stuff, 18660; third, F. M. Buck on Oak Dale Lad 3d, 16688.

Boar Eighteen Months, Under Two Years—First, F. M. Buck.

Boar One Year, Under Eighteen Months—First, B. F. Davidson on Lake Park Fashion, 18974; second, T. I. Manley on Royal Stuff 1st, 20571; third, F. M. Buck on Prairie Lea Wonder, 19772; fourth, T. I. Manley on Royal Stuff, 20570; fifth, F. M. Buck on Augustino Lad, 19768.

Boar Six Months, Under One Year—First, B. F. Davidson on Deer Creek Evener, 19723; second, B. F. Davidson on Deer Creek Modeler 3d, 20496; third, T. I. Manley on Tinker, 20573; fourth, T. I. Manley on Tinker 2d, 20574; fifth, F. M. Buck on Meadow Glen Lad; sixth, F. M. Buck on Meadow Glen Lad 2d.

Boar Under Six Months—First, B. F. Davidson; second, B. F. Davidson; third, F. M. Buck; fourth, F. M. Buck.

Sow Two Years or Over—First, B. F. Davidson on Deer Creek Martha 5th, 14977; second, F. M. Buck on Mondamin Gem 3d, 15886; third, F. M. Buck on Lake Park Augustine 3d, 16587; fourth, T. I. Manley on O. U. Beauty.

Sow Eighteen Months, Under Two Years—First, F. M. Buck on Pride's Gem, 18270; second, F. M. Buck on Prairie Lea Augustine, 18268.

Sow One Year, Under Eighteen Months—First, B. F. Davidson on Deer Creek Martha 13th, 18421; second, T. I. Manley on Royal Stuff 2d, 20572; third, B. F. Davidson on Deer Creek Nema 5th, 18419; fourth, F. M. Buck on Gem of the Lea 6th, 19770; fifth, F. M. Buck on Prairie Lea Star, 19771.

Sow Six Months, Under One Year—First, B. F. Davidson on Deer Creek E. Lena, 19727; second, B. F. Davidson on Deer Creek Nema 6th, 20493.

Sow Under Six Months—First, B. F. Davidson; second, B. F. Davidson; third, F. M. Buck; fourth, T. I. Manley.

Champion Boar Over One Year—F. M. Buck on Dan D. Stuff.

Champion Boar Under One Year—B. F. Davidson on Deer Creek Evener.

Champion Sow Over One Year—B. F. Davidson on Deer Creek Martha 5th.

Champion Sow Under One Year—B. F. Davidson on Deer Creek Lena.

Grand Champion Boar, Any Age—F. M. Buck on Dan D. Stuff.

Grand Champion Sow, Any Age—B. F. Davidson on Deer Creek Martha 5th.

Boar and Three Sows Over One Year—First, B. F. Davidson; second, F. M. Buck; third, T. I. Manley.

Boar and Three Sows Over One Year, Bred by Exhibitor—First, T. I. Manley; second, F. M. Buck.

Boar and Three Sows Under One Year—First, B. F. Davidson; second, B. F. Davidson; third, F. M. Buck; fourth, T. I. Manley.

Boar and Three Sows, Under One Year, Bred by Exhibitor—First, B. F. Davidson; second, F. M. Buck; third, T. I. Manley; fourth, B. F. Davidson.

Get of Sire—First, B. F. Davidson; second, B. F. Davidson; third, F. M. Buck; fourth, T. I. Manley.

Produce of Sow—First, B. F. Davidson; second, T. I. Manley; third, F. M. Buck.

Special Prize Offered by the American Yorkshire Club—B. F. Davidson.

TAMWORTH.

EXHIBITORS.

F. M. Hartsel, Carthage, Ill.; J. B. Mackoy, Farragut, Iowa.

JUDGE............................C. C. ROUP, Kalona, Iowa.

Boar Two Years or Over—First, F. M. Hartzell on Knoll Slope Duke, 9824; second, J. B. Mackoy on Pine Ridge Glenn, 15114; third, J. B. Mackoy on Appalachian King, 12097.

Boar Eighteen Months, Under Two Years—First, J. B. Mackoy on Shamrock 2d, 13916; second, F. M. Hartzell on Teddy L., 14972; third, J. B. Mackoy on Stony Croft Ike, 14780.

Boar One Year, Under Eighteen Months—First, J. B. Mackoy on Superior Lad, 15807; second, F. M. Hartzell on H. J. W., 15849; third, J. B. Mackoy on B's Mastodon, 15809; fourth, F. M. Hartzell on Maple Leaf Reveller 2d, 14685.

Boar Six Months, Under One Year—First, F. M. Hartzell on Herman, 15847; second, J. B. Mackoy on Mastif Prince, 15798; third, J. B. Mackoy; fourth, F. M. Hartzell on John D., 15848.

Boar Under Six Months—First, J. B. Mackoy; second, F. M. Hartzell; third, F. M. Hartzell; fourth, J. B. Mackoy.

Sow Two Years or Over—First, J. B. Mackoy on Glenary Lettie, 7582; second, F. M. Hartzell on Brendette, 9545; third, F. M. Hartzell on Peggy H., 13722; fourth, J. B. Mackoy on Olga Nethersole, 12009.

Sow Eighteen Months, Under Two Years—First, F. M. Hartzell on Elizabeth, 14973; second, J. B. Mackoy on Lady Lou, 13917; third, J. B. Mackoy.

Sow One Year, Under Eighteen Months—First, J. B. Mackoy on Superior Lady, 15806; second, F. M. Hartzell on Cerise, 14975; third, J. B. Mackoy on Lady Superior, 15804.

Sow Six Months, Under One Year—First, J. B. Mackoy on Cedar Crest Rose, 15799; second, F. M. Hartzell on Maud H., 15844; third, F. M. Hartzell on Beky, 15843; fourth, J. B. Mackoy on Cedar Crest Rosary, 15800.

—*Sow Under Six Months*—First, F. M. Hartzell; second, J. B. Mackoy; third, J. B. Mackoy; fourth, F. M. Hartzell.

Champion Boar Over One Year—F. M. Hartzell.

Champion Boar Under One Year—F. M. Hartzell.

Champion Sow Over One Year—J. B. Mackoy.

Champion Sow Under One Year—J. B. Mackoy.

Grand Champion Boar, Any Age—F. M. Hartzell.

Grand Champion Sow, Any Age—J. B. Mackoy.

Boar and Three Sows Over One Year—First and fourth, F. M. Hartzell; second and third, J. B. Mackoy.

Boar and Three Sows Under One Year, Bred by Exhibitor—First, F. M. Hartzell; second and third, J. B. Mackoy.

Boar and Three Sows Under One Year—First and third, F. M. Hartzell; second and fourth, J. B. Mackoy.

Boar and Three Sows Under One Year, Bred by Exhibitor—First and third, F. M. Hartzell; second and fourth, J. B. Mackoy.

Get of Sire—First and fourth, J. B. Mackoy; second and third, F. M. Hartzell.

Produce of Sow—First and third, J. B. Mackoy; second and fourth, F. M. Hartzell.

SHEEP DEPARTMENT.

SUPERINTENDENT.............C. H. TRIBBY, Mt. Pleasant, Ia.

MERINO CLASS "B."

EXHIBITORS.

F. F. and V. G. Warner, Bloomfield, Iowa; Uriah Cook & Son, Peoria, Ohio; A. J. Blakely & Son, Grinnell, Iowa; S. Rail & Sons, Birmingham, Iowa; F. W. Cook, West Mansfield, Ohio.

JUDGE......................J. E. WEBB, Southport, Indiana.

AWARDS.

Ram Two Years Old or Over—First and second, Uriah Cook & Son; third, A. J. Blakely & Son on 2304.

Ram One Year Old and Under Two—First and second, Uriah Cook & Son; third, A. J. Blakely & Son on 2339.

Ram, Under One Year—First, Uriah Cook & Son; second, A. J. Blakely & Son; third, F. F. and V. G. Warner.

Ewe One Year Old and Under Two—First and second, Uriah Cook & Son; third, A. J. Blakely & Son on 2351.

Ewe Under One Year—First, Uriah Cook & Son; second, S. Rail & Sons; third, A. J. Blakely & Son.

Champion Ram, Any Age—Uriah Cook & Son.

Champion Ewe, Any Age—Uriah Cook & Son.

Flock—First, Uriah Cook & Son; second, A. J. Blakely & Son; third, S. Rail & Sons.

Breeders' Pen—First, Uriah Cook & Son; second, A. J. Blakely & Son; third, S. Rail & Sons.

Get of Sire—First, Uriah Cook & Son; second, A. J. Blakely & Son; third, S. Rail & Sons.

IOWA SPECIALS.

Ram Two Years Old or Over—First and third, S. Rail & Sons; second, F. F. & V. G. Warner on 77695.

Ram One Year Old and Under Two—First, A. J. Blakely & Son on 2339; second and third, S. Rail & Sons.

Ram Under One Year—First and second, A. J. Blakely & Son; third F. F. & V. G. Warner.

Ewe One Year Old and Under Two—First and third, A. J. Blakely & Son on 2351 and 2354; second, S. Rail & Sons.

Ewe Under One Year—First and third, S. Rail & sons; second, A. J. Blakely & Son.

Champion Ewe, Any Age—A. J. Blakely & Son on 2339.

Champion Ram, Any Age—A. J. Blakely & Son on 2351.

Flock—First, A. J. Blakely & Son; second, S. Rail & Sons.

Breeders' Pen—First, A. J. Blakely & Son; second, S. Rail & Sons; third, F. F. & V. G. Warner.

Get of Sire—First, A. J. Blakely & Son; second, S. Rail & Sons; third, F. F. & V. G. Warner.

MERINO, CLASS "C."

Ram Two Years Old or Over—First and third, F. W. Cook; second, F. F. & V. G. Warner on 77701.

Ram One Year Old and Under Two—First and second, F. W. Cook; third, F. F. & V. G. Warner on 89562.

Ram Under One Year—First and second, F. W. Cook; third, A. J. Blakely & Son on 2382.

Ewe One Year Old and Under Two—First and third, F. W. Cook; second, F. F. & V. G. Warner on 89592.

Ewe Under One Year—First and third, F. W. Cook; second, A. J. Blakely & Son.

Champion Ram, Any Age—F. W. Cook.

Champion Ewe, Any Age—F. W. Cook.

Flock—First, F. W. Cook; second, A. J. Blakely & Son; third S. Rail & Sons.

Breeders' Pen—First, F. W. Cook; second, A. J. Blakely & Son; third, F. F. & V. G. Warner.

Get of Sire—First, F. W. Cook; second, A. J. Blakely & Son; third, F. F. & V. G. Warner.

IOWA SPECIALS.

Ram Two Years Old or Over—First, F. F. & V. G. Warner on 77701; second, S. Rail & Sons; third, A. J. Blakely & Son on 2268.

Ram One Year Old and Under Two—First, F. F. & V. G. Warner on 89562; second, A. J. Blakely & Son on 2348; third, S. Rail & Sons.

Ram Under One Year—First, A. J. Blakely & Son on 2382; second, A. J. Blakely & Son; third, F. F. & V. G. Warner.

Ewe One Year Old and Under Two—First, F. F. & V. G. Warner on 89592; second, A. J. Blakely & Son on 2362; third, S. Rail & Sons.

Ewe Under One Year—First, A. J. Blakely & Son; second, S. Rail & Sons; third, F. F. & V. G. Warner.

Champion Ram, Any Age—F. F. & V. G. Warner.

Champion Ewe, Any Age—F. F. & V. G. Warner.

Flock—First, A. J. Blakely & Son; second, S. Rail & Sons.

Breeders' Pen—First, A. J. Blakely & Son; second, F. F. & V. G. Warner; third, S. Rail & Sons.

Get of Sire—First, A. J. Blakely & Son; second, F. F. & V. G. Warner; third, S. Rail & Sons.

RAMBOUILLET.

EXHIBITORS.

F. S. King Bros. Co., Laramie, Wyoming; C. S. Bratt, Arapahoe, Nebraska; F. W. Cook, West Mansfield, Ohio.

JUDGE........................J. E. WEBB, Southport, Indiana.

AWARDS.

Ram Two Years Old or Over—First, F. S. King Bros. Co. on F. S. K. 1205, 72535; second, F. S. King Bros. Co. on Brieshicer No. 30; third, F. W. Cook.

Ram One Year Old and Under Two—First, F. S. King Bros. Co. on F. S. K. 1308, 71350; second, F. S. King Bros. Co. on F. S. K. 1303, 71346; third, F. W. Cook.

Ram Under One Year—First, F. S. King Bros. Co. on F. S. K. 1763; second, F. W. Cook; third, F. W. Cook.

Ewe One Year Old and Under Two—First, F. S. King Bros. Co. on F. S. K. 1309; second, F. S. King Bros. Co. on F. S. K. 1323; third, F. W. Cook.

Ewe Under One Year—First, F. S. King Bros. Co. on F. S. K. 1751; second, F. S. King Bros. Co. on F. S. K. 1766; third, F. W. Cook.

Champion Ram, Any Age—F. S. King Bros. Co. on Brieshicer.

Champion Ewe, Any Age—F. S. King Bros. Co. on F. S. K.'s 1309, 71351.

Flock—First, F. S. King Bros. Co.; second, F. W. Cook; third, C. S. Bratt.

Breeders' Pen—First, F. S. King Bros. Co.; second, F. W. Cook; third, C. S. Bratt.

Get of Sire—First, F. S. King Bros. Co.; second, F. W. Cook; third, C. S. Bratt.

COTSWOLD.

EXHIBITORS.

Anoka Farms, Waukesha, Wisconsin; W. A. Taylor & Son, Ames, Iowa; Alex. W. Arnold, Galesville, Wisconsin; Joe W. Edgar, New London, Iowa.

JUDGE............................J. G. HAMNER, Ames, Iowa.

AWARDS.

Ram One Year Old and Under Two—First, Anoka Farms on Aldsworth, 77575; second, Anoka Farms on Houlton's 77567; third, W. A. Taylor & Son on Husted's 93, 74845.

Ram Two Years Old or Over—First, Anoka Farms on Houlton, 74411; second, Alex. W. Arnold; third, W. A. Taylor & Son on Husted's 43, 74573.

Ram Under One Year—First, Anoka Farms on Alsworth's 77579; second, Anoka Farms on Swanwick's 77571; third, W. A. Taylor & Son.

Ewe One Year Old and Under Two—First, Anoka Farms on Houlton; second, Anoka Farms on 77579; third, W. A. Taylor & Son on Husted's 99, 74844.

Ewe Under One Year—First, Anoka Farms on Swanwick, 77573; second, Anoka Farms on Swanwick, 77574; third, W. A. Taylor & Son.

Champion Ram, Any Age—Anoka Farms in Houlton, 74411.

Champion Ewe, Any Age—Anoka Farms on Houlton, 77571.

Flock—First, Anoka Farms; second, W. A. Taylor & Son.

Get of Sire—First, Anoka Farms.

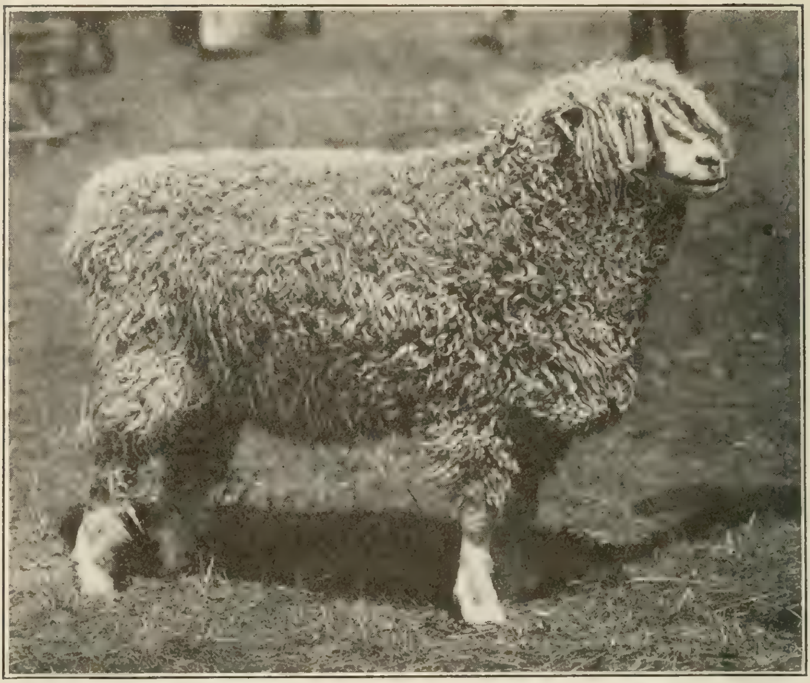
IOWA SPECIALS.

Ram One Year Old and Under Two—First, Joe W. Edgar on Edgar's 196, 75599; second, Joe W. Edgar on Edgar's 201, 75604.

Ram Under One Year—First, Joe W. Edgar on Edgar's 206; second, Joe W. Edgar on Edgar's 208.

Ewe One Year Old and Under Two—First, Joe W. Edgar on Edgar's 200, 75603.

Ewe Under One Year—First, Joe W. Edgar on Edgar's 205; second, Joe W. Edgar on Edgar's 207.



Champion Cotswold Ram, Houlton, owned by Anoka Farms, Waukesha, Wisconsin.

Champion Ram, Any Age—First, Joe W. Edgar on 75599.
Champion Ewe, Any Age—First, Joe W. Edgar on Edgar's 200, 75603.
Breeders' Pen—First, Joe W. Edgar.
Get of Sire—First, Joe W. Edgar.

LINCOLN.

EXHIBITOR.

Alex. W. Arnold, Galesville, Wisconsin.

JUDGE............................J. G. HAMNER, Ames, Iowa.

AWARDS.

Ram Two Years Old or Over—First on 24198.
Ram One Year Old and Under Two—First on 26418.
Ram Under One Year—First on 26419; second on 26420.
Ewe One Year Old and Under Two—First on 26421; second on 26424.
Ewe Under One Year—First on 26422; second on 26423.
Champion Ram, Any Age—First.
Champion Ewe, Any Age—First.
Flock—First.
Breeders' Pen—First.
Get of Sire—First.

HAMPSHIRE DOWNS.

EXHIBITORS.

Wm. Cooper & Nephews P. S. Co., Chicago, Ill.; Alex. W. Arnold, Galesville, Wisconsin; John Graham & Sons, Eldora, Iowa.

JUDGE............................J. G. HAMNER, Ames, Iowa.

Champion Lincoln Ram, owned by Alexander W. Arnold, Galesville, Wisconsin.

AWARDS.

Ram Two Years Old or Over—First, Alex. W. Arnold on Golden Avon, 15660.

Ram One Year Old and Under Two—First, Alex. W. Arnold on Gold Fort, 15659.

Ram Under One Year—First, Alex. W. Arnold on 15662; second, Alex. W. Arnold on 15661; third, John Graham & Sons on Graham's 977, 15485; fourth, John Graham & Sons on Graham's 976, 15484.

Ewe One Year Old and Under Two—First, Alex. W. Arnold on 37985; second, Alex. W. Arnold on 37986; third, John Graham & Sons on Emmons 263, 36428; fourth, John Graham & Sons on Emmons 227, 36414.

Ewe Under One Year—First, Alex. W. Arnold on 37987; second, Alex. W. Arnold on 37988; third, John Graham & Son on Graham's 972; fourth, John Graham & Son on Graham's 979.

Champion Ram, Any Age—Alex. W. Arnold on 15662.

Champion Ewe, Any Age—Alex. W. Arnold on 37987.

Flock—First, Alex. W. Arnold; second, John Graham & Son.

Breeders' Pen—First, John Graham & Son.

Get of Sire—First, Alex. W. Arnold second, John Graham & Son.

SHROPSHIRE.

EXHIBITORS.

Anoka Farms, Waukesha, Wisconsin; E. L. Bitterman, Mason City, Iowa; H. D. Eddingfield, Mt. Pleasant, Iowa; J. S. Fawcett & Son, Springdale, Iowa; W. T. Fawcett, Mt. Vernon, Iowa; F. P. McAdoo, Indianola, Iowa; O. H.

Peasley & Sons, Indianola, Iowa; C. W. Poulter, Cumberland, Iowa; H. H. Reed, Marengo, Iowa; W. A. Taylor & Son, Ames, Iowa.

JUDGE..........................J. G. HAMNER, Ames, Iowa.

AWARDS.

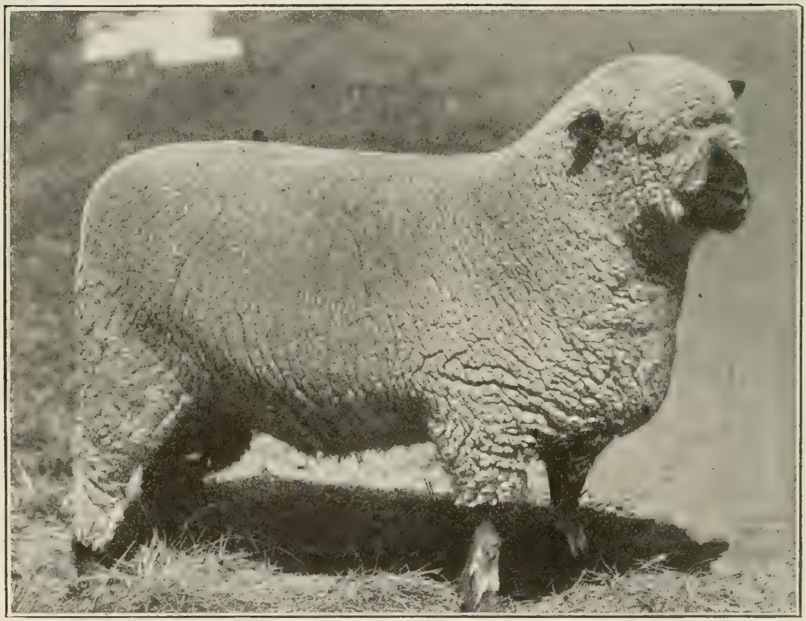
Ram Two Years Old or Over—First, Anoka Farms on Corston Stamp, 392575; second, E. L. Bitterman on East View's Royal, 385426; third, E. L. Bitterman on East View's Ben, 385424; fourth, C. W. Poulter on Poulter's Royal Boy, No. 658, 383946.

Ram One Year Old and Under Two—First, Anoka Farms on Brewin's 79, 392556; second, H. D. Eddingfield on Tanner; third, Anoka Farms on Corston Expectation, 392566; fourth, W. A. Taylor & Son on 392576.

Ram Under One Year—First, H. D. Eddingfield on Westminster; second, Anoka Farms on Sutton Stamp, 392545; third, E. L. Bitterman on The Decision, 391313; fourth, W. A. Taylor & Son on 392485.

Ewe One Year Old and Under Two—First, H. D. Eddingfield on Westminister; second, Anoka Farms on Brewin's, 392554; third, Anoka Farms on Buttars, 392568; fourth, W. A. Taylor & Son on 312573.

Ewe Under One Year—First, Anoka Farms on Brewin's, 392554; second, H. D. Eddingfield on Enock; third, Anoka Farms; fourth, W. T. Fawcett.



Champion Shropshire Ram, No. 392556; owned by Anoka Farms, Waukesha, Wis.

Champion Ram, Any Age—Anoka Farms on Brewin's 79, 392556.

Champion Ewe, Any Age—H. D. Eddingfield on Westminister.

Flock—First, Anoka Farms; second, H. D. Eddingfield; third, J. S. Fawcett & Son; fourth, E. L. Bitterman.

Breeders' Pen—First, E. L. Bitterman; second, H. D. Eddingfield; third, J. S. Fawcett & Son; fourth, W. A. Taylor & Son.

Get of Sire—First, Anoka Farms; second, E. L. Bitterman; third, H. D. Eddingfield; fourth, J. S. Fawcett & Son.

IOWA SPECIALS.

Ram Two Years Old or Over—First, E. L. Bitterman on East View's Royal, 385426; second, E. L. Bitterman on East View's Ben, 385424; third, H. D. Eddingfield on Eddingfield's 103, 361475; fourth, O. H. Peasley & Sons on Peasley's 351, 389621; fifth, O. H. Peasley & Sons on Onward, 261696.

Ram One Year Old and Under Two—First, E. L. Bitterman on East View's 605, 376634; second, W. A. Taylor & Son on Maple Grove's Dean, 376825; third, J. S. Fawcett & Son on Fawcett's 316, 391476; fourth, H. D. Eddingfield on Valley Home Ram 129, 376921; fifth, J. S. Fawcett & Son on Fawcett's 311, 391477.

Ram Under One Year—First, E. L. Bitterman on The Decision, 391313; second, W. A. Taylor & Son on 392485; third, H. D. Eddingfield on Valley Home Holker 159, 391748; fourth, E. L. Bitterman on Bitterman's Choice, 391312; fifth, W. A. Taylor & Son on 392486.

Ewe One Year Old and Under Two—First, J. S. Fawcett & Son on Fawcett's 285, 376650; second, H. D. Eddingfield on Valley Home Beauty 121, 376913; third, E. L. Bitterman on East View's Flossie, 391323; fourth, E. L. Bitterman on East View's 603, 376847; fifth, J. S. Fawcett & Son on Fawcett's 287, 392872.

Ewe Under One Year—First, W. T. Fawcett on 392875; second, H. D. Eddingfield on Miss Holker 168, 391746; third, E. L. Bitterman on East View's Lady Swiss, 391318; fourth, J. S. Fawcett & Son on Fawcett's 321, 392871; fifth, J. S. Fawcett & Son on Fawcett's 320, 392870.

Champion Ram, Any Age—E. L. Bitterman on The Decision, 391313.

Champion Ewe, Any Age—J. S. Fawcett & Son on Fawcett's 285, 376650.

Flock—First, J. S. Fawcett & Son; second, E. L. Bitterman; third, H. D. Eddingfield; fourth, O. H. Peasley & Sons; fifth, W. A. Taylor & Son.

Breeders' Pen—First, H. D. Eddingfield; second, J. S. Fawcett & Son; third, W. A. Taylor & Son; fourth, W. T. Fawcett; fifth, O. H. Peasley & Sons.

Get of Sire—First, H. D. Eddingfield; second, J. S. Fawcett & Son; third, W. A. Taylor & Son; fourth, W. T. Fawcett; fifth, O. H. Peasley & Sons.

SPECIALS BY AMERICAN SHROPSHIRE REGISTRY ASSOCIATION.

Ram Two Years Old or Over—First, E. L. Bitterman on East View Royal, 385426; second, E. L. Bitterman on East View Ben, 385424; third, H. D. Eddingfield on Eddingfield's 103, 361475; fourth, O. H. Peasley & Sons on Peasley's 351, 389621.

Ram One Year Old and Under Two—First, E. L. Bitterman on East View's 105, 376634; second, E. L. Bitterman on 376632; third, W. A. Taylor & Son on Maple Grove's Dean, 376825; fourth, J. S. Fawcett & Son on Fawcett's 311, 391476.

Ram Lamb—First, E. L. Bitterman on The Decision, 391313; second, W. A. Taylor & Son on Maple Grove's Gay Lord, 392485; third, H. D. Eddingfield on Valley Home Holker 159, 391748; fourth, E. L. Bitterman on Bitterman's Choice, 391312.

Ewe One Year Old and Under Two—First, J. S. Fawcett & Son on Fawcett's 285, 376650; second, H. D. Eddingfield on Valley Home Beauty, 376913; third, E. L. Bitterman on East View's Flossie, 391323; fourth, E. L. Bitterman on East View's 603, 376847.

Ewe Lamb—First, W. F. Fawcett on 392875; second, H. D. Eddingfield on Miss Holker's 168, 391746; third, E. L. Bitterman on East View's Lady Swiss, 391318; fourth, J. S. Fawcett & Son on Fawcett's 320, 392870.

Champion Ram, Any Age—E. L. Bitterman on The Decision, 391313.

Champion Ewe, Any Age—J. S. Fawcett & Son on Fawcett's 285, 376650.

Breeders' Pen—First, E. L. Bitterman; second, H. D. Eddingfield; third, J. S. Fawcett & Son.

IOWA SWEEPSTAKES.

Best Ram, All Mutton Breeds—E. L. Bitterman on East View's Royal, 385426.

Best Ewe, All Mutton Breeds—J. S. Fawcett & Son on Fawcett's 285, 376650.

OXFORD DOWNS.

EXHIBITORS.

R. E. Baldwin, Osceola, Iowa; C. S. Bratt, Arapahoe, Neb.; Wm. Cooper & Nephews P. S. Co., Chicago, Ill.; C. C. Croxen, Atalissa, Iowa; John Graham & Son, Eldora, Iowa; Geo. McKerrow & Sons Co., Pewaukee, Wis.

JUDGE.........................J. G. HAMNER, Ames, Iowa.

AWARDS.

Ram Two Years Old or Over—First, Geo. McKerrow & Sons Co. on 65277; second, C. C. Croxen on 58542; third, R. E. Baldwin on Lyndale Advance, 67222; fourth, John Graham & Son on Graham's 661, 50035.

Ram One Year Old and Under Two—First, Geo. McKerrow & Sons Co.; second, C. C. Croxen; third, John Graham & Son on Graham's 955; fourth, C. C. Croxen.

Ram Under One Year—First, Geo. McKerrow & Sons Co.; second, John Graham & Son on Graham's 985; third, C. C. Croxen; fourth, John Graham & Son on Graham's 963.

Ewe One Year Old and Under Two—First, Geo. McKerrow & Sons Co.; second, Geo. McKerrow & Sons Co.; third, C. C. Croxen; fourth, John Graham & Son on Graham's 906.

Ewe Under One Year—First, Geo. McKerrow & Sons Co.; second, Geo. McKerrow & Sons Co.; third, John Graham & Son on Graham's 975; fourth, C. C. Croxen.

Champion Ram, Any Age—Geo. McKerrow & Son on 65277.

Champion Ewe, Any Age—Geo. McKerrow & Son.

Flock—First, Geo. McKerrow & Sons Co.; second, C. C. Croxen; third, John Graham & Son; fourth, R. E. Baldwin.

Breeders' Pen—First, John Graham & Son; second, C. C. Croxen; third, R. E. Baldwin.

Get of Sire—First, John Graham & Son; second, C. C. Croxen; third, R. E. Baldwin.

IOWA SPECIALS.

Ram Two Years Old or Over—First, John Graham & Son on Graham's 661; second, C. C. Croxen; third, C. C. Croxen; fourth, John Graham & Son on Graham's 661.

Ram One Year Old and Under Two—First, C. C. Croxen; second, John Graham & Son on Graham's 955; third, C. C. Croxen; fourth, John Graham & Son on Graham's 957.

Ram Under One Year—First, John Graham & Son on Graham's 985; second, C. C. Croxen on Lyndale Advancer 3d; third, John Graham & Son on Graham's 963; fourth, R. E. Baldwin on Lyndale Advancer 2d.

Ewe One Year Old and Under Two—First, C. C. Croxen; second, John Graham & Son on Graham's 906; third, C. C. Croxen; fourth, R. E. Baldwin.

Ewe Under One Year—First, John Graham & Son on Graham's 975; second, C. C. Croxen; third, John Graham & Son on Graham's 990; fourth, R. E. Baldwin on Lyndale Lass 2d.

Champion Ram, Any Age—John Graham & Son on Graham's 985.

Champion Ewe, Any Age—C. C. Croxen.

Flock—First, C. C. Croxen; second, John Graham & Son.

Breeders' Pen—First, C. C. Croxen; second, R. E. Baldwin; third, John Graham & Son.

Get of Sire—First, C. C. Croxen; second, R. E. Baldwin; third, John Graham & Son.

SOUTH DOWN.

EXHIBITORS.

Alex. W. Arnold, Galesville, Wis.; R. F. Fantz, New Hampton, Iowa.

JUDGE.........................J. G. HAMNER, Ames, Iowa.

AWARDS.

Ram Two Years Old or Over—First, R. F. Fantz on Fantz 49, 26442; second, Alex. W. Arnold on 26355.

Ram One Year and Under Two—First, Alex. W. Arnold on 31530; second, R. F. Fantz on Fantz 59, 31004; third, R. F. Fantz on Fantz 61, 31005.

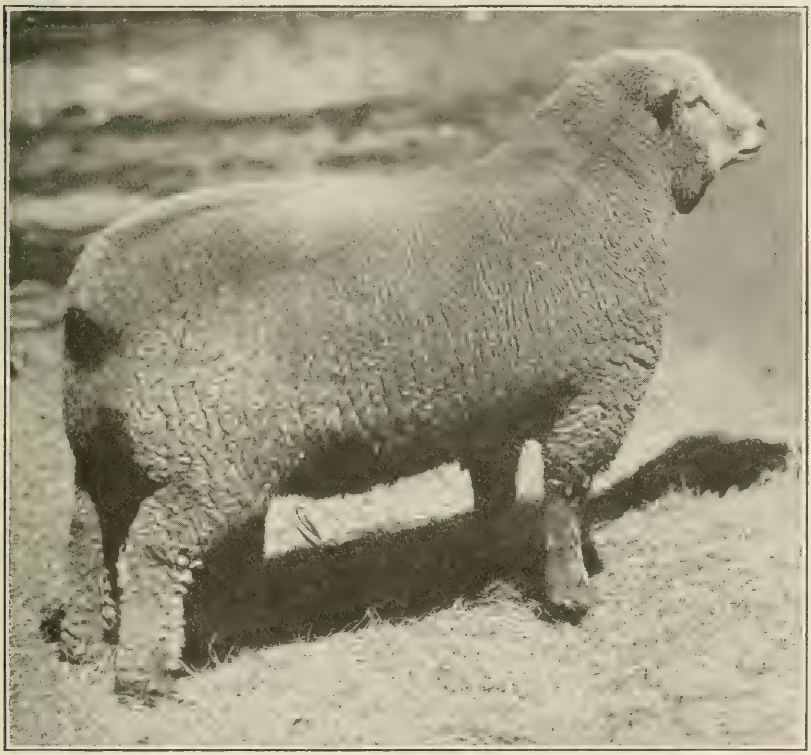
Ram Under One Year—First, Alex. W. Arnold on Arnold's 115.

Ewe One Year Old and Under Two—First, Alex. W. Arnold on 31538.

Ewe Under One Year—First, Alex. W. Arnold on 31534; second, R. F. Fantz 101, 31007; third, R. F. Fantz on Fantz 102, 31008.

Champion Ram, Any Age—Alex. W. Arnold on 31530.

Champion Ewe, Any Age—Alex. W. Arnold on 31538.



Champion Southdown Ewe, No. 31538, owned by Alexander W. Arnold, Galesville, Wisconsin.

DORSET.

EXHIBITOR.

H. H. Cherry, Xenia, Ohio.

JUDGE............................J. G. HAMNER, Ames, Iowa.

AWARDS.

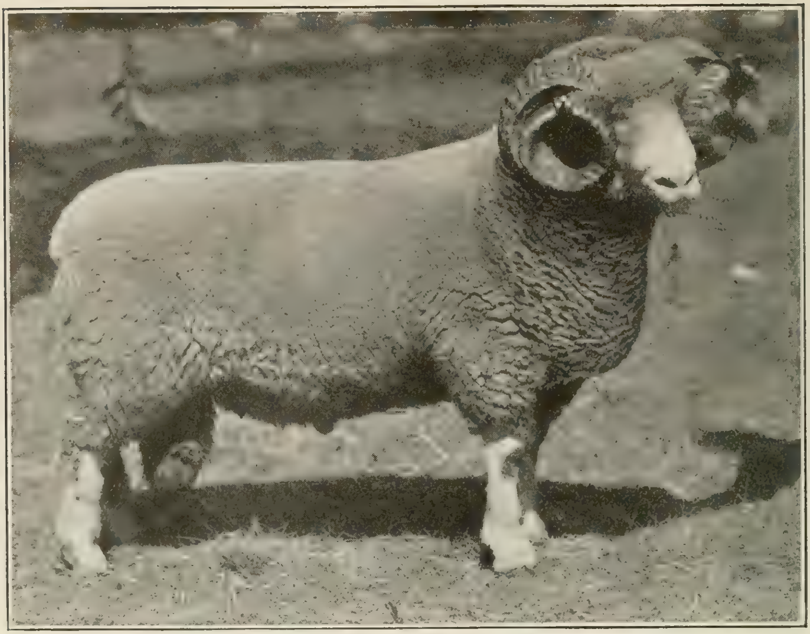
Ram Two Years Old or Over—First and second, H. H. Cherry.

Ram One Year Old and Under Two—First and second, H. H. Cherry.

Ram Under One Year—First and second, H. H. Cherry.

Ewe One Year Old and Under Two—First and second, H. H. Cherry.

Ewe Under One Year—First and second, H. H. Cherry.



Champion Dorset Ram, owned by H. H. Cherry, Xenia, Ohio.

Champion Ram, Any Age—H. H. Cherry.
Champion Ewe, Any Age—H. H. Cherry.
Flock—H. H. Cherry.
Breeders' Pen—First, H. H. Cherry.
Get of Sire—First, H. H. Cherry.

CHEVIOT.

EXHIBITOR.

Wayne C. Postle, Camp Chase, Ohio.

JUDGE............................J. G. HAMNER, Ames, Iowa.

AWARDS.

Ram Two Years Old or Over—First, Wayne C. Postle on True Type, 7697; second, Wayne C. Postle on White Stocks 160, 7478.

Ram One Year Old and Under Two—First, Wayne C. Postle on White Stocks Example, 7859; second, Wayne C. Postle on White Stocks Challenger, 7854.

Ram Under One Year—First, Wayne C. Postle on Postle's 204; second, Wayne C. Postle on Postle's 196.

Ewe One Year Old and Under Two—First, Wayne C. Postle on White Stocks Example, 8256; second, Wayne C. Postle on White Stocks Example, 8254.

Ewe Under One Year—First, Wayne C. Postle; second, Wayne C. Postle.

Champion Ram, Any Age—Wayne C. Postle on 7697.

Champion Ewe, Any Age—Wayne C. Postle on 8256.

Flock—First, Wayne C. Postle.

Breeders' Pen—First, Wayne C. Postle.

Get of Sire—First, Wayne C. Postle.

Pair of Cheviots; owned by Wayne C. Postle, Camp Chase, Ohio.

ANGORA GOATS.

EXHIBITOR.

H. C. Davis, Ames, Iowa.

JUDGE............................J. G. HAMNER, Ames, Iowa.

AWARDS.

Buck Two Years or Over—First, H. C. Davis.
Buck One Year—First, H. C. Davis.
Buck, Kid—First, H. C. Davis; second, H. C. Davis.
Doe Two Years or Over—First, H. C. Davis; second, H. C. Davis.
Doe One Year—First and second, H. C. Davis.
Doe, Kid—First and second, H. C. Davis.
One Buck and Three Does, Any Age—First, H. C. Davis.
Champion Buck, Any Age—H. C. Davis.
Champion Doe, Any Age—H. C. Davis.

POULTRY DEPARTMENT.

SUPERINTENDENT................E. L. BECK, Des Moines, Iowa.

AMERICANS.

EXHIBITORS.

A. L. Anderson, Indianola, Iowa; J. C. Ash, Norwalk, Iowa; J. M. Brown, St. Charles, Iowa; Garrie R. Bishop, Mitchellville, Iowa; M. H. Buck, Prairie City, Iowa; Mrs. W. L. Beatty, Des Moines, Iowa; O. C. Bierma, Mitchellville, Iowa; Mrs. H. I. Branson, West Branch, Iowa; Oscar L. Bock, Council Bluffs, Iowa; A. and J. W. Boyt, Des Moines, Iowa; Bushmann-Pierce Red Farms, Indianapolis, Ind.; Wib. F. Clements, Agency, Iowa; Scott Covalt, Council Bluffs, Iowa; Guy Davis, Scranton, Iowa; Dalton Bros., Hawarden, Iowa; Joe F. Denburger, Des Moines, Iowa; Farmer & Bell, Ft. Dodge, Iowa; Clarence H. Frame, Villisca, Iowa; H. U. Fishel, Hope, Ind; Fishel & Son, Hope, Ind.; H. V. Hethershaw, Des Moines, Iowa; A. L. Huston, Red Oak, Iowa; J. F. Harsh, New Virginia, Iowa; C. G. Hammer, Indianola, Iowa; Hillcrest Farm, Valley Junction, Iowa; Hubler & Son, Marshalltown, Iowa; Peter Hove, Stanhope, Iowa; W. C. Hengen, Ottumwa, Iowa; Mrs. Frank Isbell, Des Moines, Iowa; Iowa,-Nebraska Poultry Company, Council Bluffs, Iowa; A. B. Jordan, Moravia, Iowa; W. C. Jacobs, Knoxville, Iowa; L. W. Jackson, Des Moines, Iowa; R. S. Jackson, Muscatine, Iowa; Wm. J. Lockhart, Des Moines, Iowa; Mahogany Range, Muscatine, Iowa; Wm. Mather, Des Moines, Iowa; R. D. Miller, Marshalltown, Iowa; Beatrice Mansfield, Altoona, Iowa; J. V. Pfander & Son, Clarinda, Iowa; E. J. Redel, Marshalltown, Iowa; J. D. Reed, Tipton, Iowa; Mrs. Wm. Stall, Le Mars, Iowa; Richard Shope, Des Moines, Iowa; Julius Sinn, Williamsburg, Iowa; C. E. Spaugh, Rugby, Ind.; L. J. Schuster, Des Moines, Iowa; C. H. Townsend, Nemaha, Iowa; J. L. Todd, Des Moines, Iowa; Jas. H. Wyman, Des Moines, Iowa; M. G. Weaver, Lewis, Iowa; Harry M. Webster, Runnells, Iowa; Dana Wagner, Des Moines, Iowa; F. F. & V. G. Warner, Bloomfield, Iowa; E. C. Wilson, West Liberty, Iowa; Ray Williams, Hampton, Iowa; R. E. West, Altoona, Iowa; Wm. Winnike, Carroll, Iowa; Mrs. Wm. Zurnmehlen, Burlington, Iowa.

AWARDS.

JUDGES........................W. S. RUSSELL, Ottumwa, Iowa.
F. H. SHELLABARGER, West Liberty, Iowa.

Flock—First (13-14-15-16-17-18-19-20-21-22-23), Hubler & Son; second, (50-23-76-58-96-24-90-25-86-2-84), W. C. Hengen.

Barred Plymouth Rock Cock, Cockerel Bred—First (415), C. E. Spaugh; second (7), Wm. Winnike; third (66), Mrs. Wm. Stall.

Barred Plymouth Rock Cockerel, Cockerel Bred—First (74), Wm. Winnike; second, C. E. Spaugh; third (608), C. E. Spaugh.

Barred Plymouth Rock Hen, Cockerel Bred—First (46), J. F. Harsh; second (46), Mrs. H. I. Branson; third (45), J. F. Harsh.

Barred Plymouth Rock Pullet, Cockerel Bred—First (61), Wm. Mather; second (69), Wm. Winnike; third (48), Mrs. H. I. Branson.

Barred Plymouth Rock Exhibition Pen—Fowls, Cockerel Bred—First (4-311-43-48-372), J. F. Harsh; second (64-71-53-75-12), Wm. Minnike.

Barred Plymouth Rock Exhibition Pen—Chicks, Cockerel Bred—First (49-31-70-60-57), Wm. Winnike; second (61-62-47-58-66), J. F. Harsh.

Barred Plymouth Rock Cock, Pullet Bred—First (52), L. J. Schuster; second (1), H. V. Hethershaw; third (30), Mrs. H. I. Branson.

Barred Plymouth Rock Cockerel, Pullet Bred—First (18), M. H. Buck; second (19), M. H. Buck; third (72), Wm. Winnike.

Barred Plymouth Rock Hen, Pullet Bred—First (55), L. J. Schuster; second, C. E. Spaugh; third, C. E. Spaugh.

Barred Plymouth Rock Pullet, Pullet Bred—First (2519), C. E. Spaugh; second (67), Wm. Winnike; third (4), H. V. Hethershaw.

Barred Plymouth Rock Exhibition Pen—Fowls, Pullet Bred—First (62-54-58-68-61), Wm. Winnike; second (58-59-60-61-62), L. J. Schuster.

Barred Plymouth Rock Exhibition Pen—Chicks, Pullet Bred—First (63-64-65-66-67), L. J. Schuster; second (66-52-56-61-74), Wm. Winnike; third, (6-64-63-67-69), J. F. Harsh.

White Plymouth Rock Cock—First (8297), U. R. Fishel; second (3338), U. R. Fishel; third (3315), U. R. Fishel.

White Plymouth Rock Cockerel—First (3331), U. R. Fishel; second (3307), U. R. Fishel; third (10), Mrs. Frank Isbell.

White Plymouth Rock Hen—First (7190), U. R. Fishel; second (6877), U. R. Fishel; third (1969), U. R. Fishel.

White Plymouth Rock Pullet—First (1970), U. R. Fishel; second (12), Mrs. Frank Isbell; third (13), Mrs. Frank Isbell.

White Plymouth Rock Exhibition Pen—Fowls—First (1801-38254-2890-1963-151), U. R. Fishel; second (2025-2021,590-2018-2482), U. R. Fishel.

White Plymouth Rock Exhibition Pen—Chicks—First (2012-1989-1953-1985-2865), U. R. Fishel; second (1981-1975-1996-2870-2040), U. R. Fishel; third (1-2-3-4-5), Mrs. Frank Isbell.

Buff Plymouth Rock Cock—First (52), Peter Hove; second (43), Hillcrest Farm; third (9), Joe F. Denburger.

Buff Plymouth Rock Cockerel—First (11), M. G. Weaver; second (124), Joe F. Denburger; third (26), Peter Hove.

Buff Plymouth Rock Hen—First (665), Joe F. Denburger; second (654), Joe F. Denburger; third (11), Peter Hove.

Buff Plymouth Rock Pullet—First (19), Peter Hove; second (91), M. G. Weaver; third (29), Peter Hove.

Buff Plymouth Rock Exhibition pen—Fowls—First (5-9-54-33-42), Peter Hove; second (178-621-625-690-647), Joe F. Denburger.

Buff Plymouth Rock Exhibition Pen—Chicks—First (10-11-12-13-14), Wm. J. Lockhart; second (30-9-51-15-38), Peter Hove; third (5-6-7-8-9), Wm. J. Lockhart.

Partridge Plymouth Rock Cock—First (68), L. J. Schuster.

Partridge Plymouth Rock Cockerel—First (69), L. J. Schuster; second (70), L. J. Schuster; third (71), L. J. Schuster.

Partridge Plymouth Rock Hen—First (72), L. J. Schuster; second, (73), L. J. Schuster.

Partridge Plymouth Rock Pullet—First (75), L. J. Schuster; second (74), L. J. Schuster.

Partridge Plymouth Rock Exhibition Pen—Fowls—First (76-77-78-79-80), L. J. Schuster.

Partridge Plymouth Rock Exhibition Pen—Chicks—First (81-82-83-84-85), L. J. Schuster.

Silver Wyandotte Cock—First (901), F. F. & V. G. Warner; second (2), A. L. Anderson.

Silver Wyandotte Cockerel—First (1231), F. F. & V. G. Warner; second (1101), F. F. & V. G. Warner; third (7), A. L. Anderson.

Silver Wyandotte Hen—First (1104), F. F. & V. G. Warner; second (62), A. L. Anderson; third (10), A. L. Anderson.

Silver Wyandotte Pullet—First (1105), F. F. & V. G. Warner; second (1107), F. F. & V. G. Warner; third (3), A. L. Anderson.

Silver Wyandotte Exhibition Pen—Fowls—First (1228-10-11-12-13), F. F. & V. G. Warner; second (2-12-4-72-62), A. L. Anderson; third, Richard Shope.

Silver Wyandotte Exhibition Pen—Chicks—First (1114-1109-1110-1111-1112), F. F. & V. G. Warner.

Golden Wyandotte Cock—First (72), A. L. Anderson; second (96), Julius Sinn; third (1120), F. F. & V. G. Warner.

Golden Wyandotte Cockerel—First (84), A. L. Anderson; second (9), Julius Sinn; third (23), Julius Sinn.

Golden Wyandotte Hen—First (11), Julius Sinn; second (64), J. L. Todd; third (5), Julius Sinn.

Golden Wyandotte Pullet—First (4), Julius Sinn; second (99), A. L. Anderson; third (1115), F. F. & V. G. Warner.

Golden Wyandotte Exhibition Pen—Fowls—First (1144-1122-1125-1029-(1130), F. F. & V. G. Warner; second (21-19-6-10-2), Julius Sinn; third, (59-73-57-51-52), A. L. Anderson.

Golden Wyandotte Exhibition Pen—Chicks—First (22-24-8-25-21), Julius Sinn; second (80-8-1-96-97), A. L. Anderson.

White Wyandotte Cock—First (394), J. C. Fishel & Son; second (18), Oscar L. Bock; third (58), Clarence H. Frame.

White Wyandotte Cockerel—First (7), C. G. Hammer; second (85), Beatrice Mansfield; third (382), J. C. Fishel & Son.

White Wyandotte Hen—First (23), Oscar L. Bock; second (364), J. C. Fishel & Son; third (55), Garrie R. Bishop.

White Wyandotte Pullet—First (355), J. C. Fishel & Son; second (47), Beatrice Mansfield; third (371), J. C. Fishel & Son.

White Wyandotte Exhibition Pen—Fowls—First (396-397-292-356-314), J. C. Fishel & Son; second (379-381-375-378-385), J. C. Fishel & Son; third (19-15-17-20-21), Oscar L. Bock.

White Wyandotte Exhibition Pen—Chicks—First (94-240-243-244-248), Beatrice Mansfield; second (357-362-387-372-353), J. C. Fishel & Son; third (8-9-10-11-12), C. G. Hammer.

Buff Wyandotte Cockerel—First (5610), J. D. Reid; second (5644), J. D. Reid; third (5668), J. D. Reid.

Buff Wyandotte Hen—First (23), F. F. & V. G. Warner.

Buff Wyandotte Pullet—First (5659), J. D. Reid; second (5660), J. D. Reid; third (5661), J. D. Reid.

Buff Wyandotte Exhibition Pen—Fowls—First (1249-1135-1133-1187-1138), F. F. & V. G. Warner.

Buff Wyandotte Exhibition Pen—Chicks—First (5658-5656-9-5651-5653), J. D. Reid.

Partridge Wyandotte Cock—First (3 Blue), Mahogany Range; second (00865), R. S. Jackson; third (49), R. S. Jackson.

Partridge Wyandotte Cockerel—First (16), F. F. & V. G. Warner; second (4 Blue), Mahogany Range; third (100), R. S. Jackson.

Partridge Wyandotte Hen—First (21 Blue), Mahogany Range; second (39), R. S. Jackson; third (56), R. S. Jackson.

Partridge Wyandotte Pullet—First (17), F. F. & V. G. Warner; second (127), R. S. Jackson; third (22 Blue), Mahogany Range.

Partridge Wyandotte Exhibition Pen—Fowls—First (23-24-25-26-5), Mahogany Range; second (45-14-6-44-33070), R. S. Jackson; third (18-19-20-21-22), F. F. & V. G. Warner.

Silver Penciled Wyandotte Cock—First (1158), F. F. & V. G. Warner.

Silver Penciled Wyandotte Cockerel—First (5), F. F. & V. G. Warner; second (6), F. F. & V. G. Warner; third (4), F. F. & V. G. Warner.

Silver Penciled Wyandotte Hen—First (9), F. F. & V. G. Warner; second (8), F. F. & V. G. Warner; third (7), F. F. & V. G. Warner.

Silver Penciled Wyandotte Pullet—First (1), F. F. & V. G. Warner; second (2), F. F. & V. G. Warner; third (3), F. F. & V. G. Warner.

Columbian Wyandotte Cockerel—First (912), Mrs. W. S. Beatty.

Columbian Wyandotte Hen—First (988), Mrs. W. S. Beatty.

Columbian Wyandotte Pullet—First (59), Mrs. W. S. Beatty; second (54), Mrs. W. S. Beatty.

Rose Comb Dominique Cockerel—First (9), M. H. Buck; second (30), M. H. Buck; second (30), M. H. Buck.

Rose Comb Dominique Hen—First (32), M. H. Buck; second (43), M. H. Buck.

Rose Comb Dominique Pullet—First (47), M. H. Buck; second (60), M. H. Buck.

Single Comb Rhode Island Red Cock—First, Buschmann Pierce Red Farms; second (91), Wib. F. Clements; third (8710), Scott Covalt.

Single Comb Rhode Island Red Cockerel—First (72), A. & J. W. Boyt; second, Buschmann-Pierce Red Farms; third (8713), Scott Covalt.

Single Comb Rhode Island Red Hen—First (87), Dana Wagner; second (42), Wib. F. Clements; third (5602), Scott Covalt.

Single Comb Rhode Island Red Pullet—First (5610), Scott Covalt; second (5560), Scott Covalt; third (5626), Scott Covalt.

Single Comb Rhode Island Red Exhibition Pen—Fowls—First (66-60-61-62-63), A. & J. W. Boyt; second (47-49-77-50-76), Wib. F. Clements.

Single Comb Rhode Island Red Exhibition Pen—Chicks—First (8715-5613-5612-5605-5627), Scott Covalt; second (8718-5625-5604-5562-5615), Scott Covalt; third, J. M. Brown.

Rose Comb Rhode Island Red Cock—First (2), R. D. Miller; second (341), Buschmann-Pierce Red Farms; third (47), W. C. Hengen.

Rose Comb Rhode Island Red Cockerel—First (48), Guy Davis; second (81), R. D. Miller; third (321), Buschmann-Pierce Red Farms.

Rose Comb Rhode Island Red Hen—First, Buschmann-Pierce Red Farms; second, Buschmann-Pierce Red Farms; third (3), Hubler & Son.

Rose Comb Rhode Island Red Pullet—First (26), Guy Davis; second (10), Mrs. Wm. Zurnmehlen; third (5), A. B. Jordan.

Rose Comb Rhode Island Red Exhibition Pen—Fowls—First (1-1-1-1-2), Buschmann-Pierce Red Farms; second (18-15-61-87-48), W. C. Hengen; third (1-1-1-1), Buschman-Pierce Red Farms.

Rose Comb Rhode Island Red Exhibition Pen—Chicks—First (83-84-85-86-17), R. D. Miller; second (139-57-58-60-101), Wib. F. Clements; third (2-91-78-83-23), W. C. Jacobs.

SWEEPSTAKES.

Best Cockerel—American Class—First (7), C. G. Hammer.

Best Pullet—American Class—First (19), Peter Hove.

ASIATIC.

EXHIBITORS.

Wib. F. Clements, Agency, Iowa; Frank Fortman, Dyersville, Iowa; Fairholme Poultry Yards, Boone, Iowa; Weir Hart, Bondurant, Iowa; F. W. Johnson, Monroe, Iowa; Jno. M. Kott, Orland, Illinois; R. A. Lundberg, Altoona, Iowa; Ed. Monilaw, Cedar Rapids, Iowa; J. M. McPherrin, Des Moines, Iowa; Beryl F. Parks, Des Moines, Iowa; A. J. Schultz, Hillsboro, Iowa; Peter Sievers, West Side, Iowa; R. E. West, Altoona, Iowa; Logan E. Wing, St. Joseph, Mo.

AWARDS.

Flock—First (322-290-231-299-282-255-319-250-401-344-438), A. J. Schultz.

Light Brahma Cock—First (25), F. W. Johnson; second (80), Fairholme Poultry Yards; third (1), Frank Fortmann.

Light Brahma Cockerel—First (12), Frank Fortmann; second (55) Weir Hart; third (26), Weir Hart.

Light Brahma Hen—First (25), Fairholme Poultry Yards; second (86), Weir Hart; third (11), Frank Fortmann.

Light Brahma Pullet—First (5), Frank Fortmann; second (37), Weir Hart; third (100), Weir Hart.

Light Brahma Exhibition Pen—Fowls—First (94-86-18-98-99), Fairholme Poultry Yards; second (58-40-74-79-32), Weir Hart.

Light Brahma Exhibition Pen—Chicks—First (35-42-54-75-59), Weir Hart.

Buff Cochin Cock—First (8), John M. Kott; second (48), R. E. West.

Buff Cochin Hen—First (62), R. E. West; second (12), Jno M. Kott; third (53), Jno. M. Kott.

Buff Cochin Exhibition Pen—Fowls—First (41-79-50-33-39), R. E. West.

Partridge Cochin Cock—First (29), R. E. West; second (399), Beryl Parks; third (291), R. A. Lundberg.

Partridge Cochin Cockerel—First (289), R. A. Lundberg; second (59), R. A. Lundberg; third (10), Beryl Parks.

Partridge Cochin Hen—First (63), R. A. Lundberg; second (99), R. A. Lundberg; third (88), R. E. West.

Partridge Cochin Pullet—First (292), R. A. Lundberg; second (297), R. A. Lundberg; third (3), Beryl Parks.

Partridge Cochin Exhibition Pen—Fowls—First (44-40-65-68-96), R. E. West.

Partridge Cochin Exhibition Pen—Chicks—First (4-5-6-7-8), Beryl Parks.

Black Langshan Cock—First (80), R. E. West; second (23), Weir Hart; third (287), A. J. Schultz.

Black Langshan Cockerel—First (A 9702-W), Logan E. Wing; second (A 9701-W), Logan E. Wing; third (309), J. M. McPherrin.

Black Langshan Hen—First (246), A. J. Schultz; second (292), A. J. Shultz; third (A 9713-W), Logan E. Wing.

Black Langshan Pullet—First (A 9704-W), Logan E. Wing; second (33), Peter Sievers; third (A 9703-W), Logan E. Wing.

Black Langshan Exhibition Pen—Fowls—First (1-2-3-4-5), E. D. Monilaw; second (73-27-26-49-97). R. E. West.

Black Langshan Exhibition Pen—Chicks—First (7-8-9-10-11), E. D. Monilaw; second (A 9707-W; A 9708-W; A 9709-W; A 9700-W), Logan E. Wing.

White Langshan Cock—First (81), R. E. West; second (97), Weir Hart;

White Langshan Cockerel—First (52), Weir Hart; second (96), Weir Hart.

White Langshan Hen—First (38), Weir Hart; second (4), R. E. West.

White Langshan Pullet—First (27), Weir Hart; second (50), Weir Hart.

SWEEPSTAKES.

Best Cockerel—Asiatic Class—First, Ed. Monilaw.

Best Pullet—Asiatic Class—First, Ed. Monilaw.

ENGLISH.

EXHIBITORS.

August Beck, Granger Iowa; Wm. Cook & Sons, Scotch Plains, N. J.; Dalton Bros., Hawarden, Iowa; J. L. Dickerson, Knoxville, Iowa; Carl Hedburg, Boxholm, Iowa; Iowana Farms, Davenport, Iowa; B. O'Keen, Ankeny, Iowa; Mahogany Range, Muscatine, Iowa; Mrs. G. Nesland, Davenport, Iowa; C. E. Pyles, Union, Iowa; K. L. Price, Missouri Valley, Iowa; Mrs. J. N. Robertson, Davenport, Iowa; W. N. Servic, Garden Grove, Iowa; W. H. Topp, West Gate, Iowa; J. S. Wright, Rockwell City, Iowa.

AWARDS.

Flock—(831-897-898-890-891-892-893-894-895-896-899), Iowana Farms.

Single Comb Buff Orpington Cock—First (26), J. S. Wright; second (20), Mrs. G. Nesland; third (67), J. S. Wright.

Single Comb Buff Orpington Cockerel—First (22), Mrs. G. Nesland; second (162), J. S. Wright; third (146), W. H. Topp.

Single Comb Buff Orpington Hen—First (180), J. S. Wright; second (239), Mrs. G. Nesland; third (27 Blue), Mahogany Range.

Single Comb Buff Orpington Pullet—First (28), Mrs. G. Nesland; second (23), Mrs. G. Nesland; third (28 Blue), Mahogany Range.

Single Comb Buff Orpington Pen—Fowls—First (55-14-161-0081-152), J. S. Wright.

Single Comb Buff Orpington Exhibition Pen—Chicks—First (144-143-133-147-150), W. H. Topp; second (1-2-3-4-5), B. O'Keen.

Single Comb Black Orpington Cockerel—First, Carl J. Hedberg.

Single Comb Black Orpington Hen—First (6), August Beck.

Single Comb Black Orpington Pullet—First (53), Carl J. Hedberg; second (52), Carl J. Hedberg; third (55), Carl J. Hedberg.

Single Comb Black Orpington Exhibition Pen—Chicks—First (1-2-3-4-5), August Beck.

Single Comb White Orpington Cock—First (827), Iowana Farms.

Single Comb White Orpington Cockerel—First (59198), W. N. Servis; second (176), K. L. Price; third (14), J. L. Dickerson.

Single Comb White Orpington Hen—First (884), Iowana Farms; second (885), Iowana Farms.

Single Comb White Orpington Pullet—First (C 8582-S), W. N. Servis; second (450), K. L. Price; third (C 8581-S), W. N. Servis.

Single Comb White Orpington Exhibition Pen—Fowls—First (830-861-862-863-864), Iowana Farms.

Single Comb White Orpington Exhibition Pen—Chicks—First (472-473-474-475-184), K. L. Price; second (C 8599-S; C 8576-S; C 8562-S; C 8560-S), W. N. Servis; third (C 8580; C 8578; C 8591; C 8577), W. N. Servis.

SWEEPSTAKES.

Best Cockerel—English Class—W. N. Servis.

Best Pullet—English Class—Mrs. G. Nesland.

MEDITERRANEAN.

EXHIBITORS.

W. O. Coon, Des Moines, Iowa; Wib. F. Clements, Agency, Iowa; Fread's Buttercup Yards, Des Moines, Iowa; H. W. Harvey, Des Moines, Iowa; B. R. Harmon, Springfield, Mo.; Otis E. Ingle, Bondurant, Iowa; F. W. Johnson, Monroe, Iowa; R. V. Keeney, Avon, Iowa; C. A. Kenworthy, Des Moines, Iowa; Ellwyn E. Lucas, Des Moines, Iowa; Mrs. Wilson McIntyre, Red Oak, Iowa; Mrs. E. A. McElroy, Des Moines, Iowa; E. B. McPherrin, Des Moines, Iowa; E. D. Monilaw, Cedar Rapids, Iowa; J. H. Reader, Leon, Iowa; Anthony Stocker, Des Moines, Iowa; Wm. Mather, Des Moines, Iowa; J. M. Williamson, Des Moines, Iowa; C. D. Warren, Altoona, Iowa; W. F. Wallace, Diagonal, Iowa; R. E. West, Altoona, Iowa.

AWARDS.

Flock—First, B. R. Harmon; second, W. Harvey; third, J. M. Williamson.

Single Comb Brown Leghorn Cock—First (96), W. O. Coon; second (24), F. W. Johnson; third (8), F. W. Johnson.

Single Comb Brown Leghorn Cockerel—Second (9), W. O. Coon.

Single Comb Brown Leghorn Hen—First (85), W. O. Coon; second (177), W. O. Coon; third (71), F. W. Johnson.

Single Comb Brown Leghorn Pullet—First (137), F. W. Johnson.

Rose Comb Brown Leghorn Cock—First (82), Wib. F. Clements; second (81), Wib. F. Clements.

Single Comb White Leghorn Cock—First (170), B. R. Harmon; second (906), Mrs. Wilson McIntyre; third (137), J. M. Williamson.

Single Comb White Leghorn Cockerel—First (1), Anthony Stocker; second (176), B. R. Harmon; third (8), W. F. Wallace.

Single Comb White Leghorn Hen—First (27), W. F. Wallace; second (73), C. D. Warren; third (177), B. R. Harmon.

Single Comb White Leghorn Pullet—First (140), J. M. Williamson; second (498), W. Harvey; third (181), B. R. Harmon.

Single Comb White Leghorn Exhibition Pen—Fowls—First (141-145-142-143-144), J. M. Williamson; second (186-187-188-189-190), B. R. Harmon; third (191-193-193-194-195), B. R. Harmon.

Single Comb White Leghorn Exhibition Pen—Chicks—First (146-147-148-149-150), J. M. Williamson; second (196-197-198-199-200), B. R. Harmon; third (201-202-203-204-205), B. R. Harmon.

Single Comb Buff Leghorn Cock—First (2), Ellwyn Lucas; second (1), Ellwyn Lucas; third (3), Ellwyn E. Lucas.

Single Comb Buff Leghorn Cockerel—First (6), Ellwyn Lucas; second (1), C. A. Kenworthy; third (6), Otis E. Ingle.

Single Comb Buff Leghorn Hen—First (7), Otis E. Ingle; second (12), Ellwyn E. Lucas; third (11), Ellwyn E. Lucas.

Single Comb Buff Leghorn Pullet—First (8), Ellwyn E. Lucas; second (9), Ellwyn E. Lucas; third (7), C. A. Kenworthy.

Single Comb Buff Leghorn Exhibition Pen—Chicks—First (607-8-9-10), Otis E. Ingle.

Single Comb Black Leghorn Cock—First (385), R. E. West.

Single Comb Black Leghorn Hen—First (33), R. E. West.

Sicilian Buttercup—Hen—First (41), E. B. McPherrin; second (311), E. B. McPherrin; third, Fread's Buttercup Yards.

Sicilian Buttercup Pullet—First (48), E. B. McPherrin; second (49), E. B. McPherrin.

Single Comb Black Minorca Cock—First (4), R. V. Keeney.

Single Comb Black Minorca Cockerel—First (357), R. E. West.

Single Comb Black Minorca Hen—First, R. E. West; second (5), R. V. Keeney.

Single Comb Black Minorca Pullet—First (381), R. E. West.

Single Comb Black Minorca Exhibition Pen—Fowls—First (186-38-8-10-195), R. E. West.

Single Comb Black Minorca Exhibition Pen—Chicks—First (14-15-16-17-18), E. D. Monilaw; second (370-391-394-380-71), R. E. West.

Single Comb White Minorca Cock—First (86), R. E. West.

Single Comb White Minorca Cockerel—Second (93), R. E. West.

Single Comb White Minorca Hen—First (51), R. E. West.

Single Comb White Minorca Pullet—Second (78), R. E. West.

White Faced Black Spanish Cock—First (75), R. E. West.

White Faced Black Spanish Hen—First (98), R. E. West.

Blue Andalusian Cock—First (32), R. E. West.

Blue Andalusian Cockerel—First (387), R. E. West.

Blue Andalusian Hen—First (37), R. E. West.

Blue Andalusian Pullet—First (5), R. E. West.

Campine, Silver, Cockerel—First (11), J. H. Reeder; second (1), Wm. Walker; third (3), Wm. Walker.

Campine, Silver, Pullet—First (2), Wm. Walker; second (5), Wm. Walker; third (6), Wm. Walker.

SWEEPSTAKES.

Best Cockerel—Mediterranean Class—(1), Anthony Stocker.

Best Pullet—Mediterranean Class—(140), J. M. Williamson.

POLISH.

EXHIBITORS.

R. E. West, Altoona, Iowa.

AWARDS.

White Crested Black Polish Cock—First (375), R. E. West.

White Crested Black Polish Hen—First (21), R. E. West.

DUTCH.

EXHIBITORS.

R. E. West, Altoona, Iowa.

AWARDS.

Golden Spangled Hamburg Cock—First (89), R. E. West.

Silver Spangled Hamburg Cockerel—First (4), R. E. West.

Silver Spangled Hamburg Hen—First (144), R. E. West.

Silver Spangled Hamburg Pullet—First (96), R. E. West.

Mottled Houdan Cock—First (27), R. E. West.

Mottled Houdan Cockerel—First (31), R. E. West.

Mottled Houdan Hen—First (62), Wib. F. Clements; second (82), R. E. West.

Mottled Houdan Pullet—First (57), R. E. West.

ORNAMENTAL GAMES AND BANTAMS.

EXHIBITORS.

Wib. F. Clements, Agency, Iowa; L. M. Collins, Des Moines, Iowa; Weir Hart, Bondurant, Iowa; Frank Harris, Des Moines, Iowa; H. H. Schultz, Des Moines, Iowa; R. E. West, Altoona, Iowa.

AWARDS.

Golden Seabright Cockerel—First (50), R. E. West

Golden Seabright Cock—First (1), R. E. West.

Golden Seabright Pullet—First (74), R. E. West.

Silver Seabright Cock—First, R. E. West.

Silver Seabright Cockerel—First (8), R. E. West.

Silver Seabright Pullet—First (89), R. E. West.

Buff Cochin Cock—First (84), Wib. F. Clements; second (390), R. E. West; third (83), Wib. F. Clements.

Buff Cochin Cockerel—First (2), L. M. Collins; second (3), L. M. Collins; third (87), Wib. F. Clements.

Buff Cochin Hen—First (82), Wib. F. Clements; second (80), R. E. West; third (4), L. M. Collins.

Buff Cochin Pullet—First (5), L. M. Collins; second (81), Wib. F. Clements; third (97), R. E. West.

Partridge Cochin Cock—First (14), R. E. West.

White Cochin Cock—First (378), R. E. West; second (4), Weir Hart.

White Cochin Cockerel—First (2), R. E. West.

White Cochin Hen—First (94), R. E. West.

White Cochin Pullet—First (3), R. E. West.

Black Cochin Cock—First (42), R. E. West; second, Frank Harris; third (56), H. H. Shultz.

Black Cochin Hen—First (45), H. H. Shultz; second, Frank Harris; third (59), H. H. Shultz.

Black Cochin Pullet—First (16), R. E. West.

MISCELLANEOUS.

EXHIBITORS.

R. E. West, Altoona, Iowa.

AWARDS.

White Silkie Cock—First, R. E. West.

White Silkie Cockerel—First (395), R. E. West.

White Silkie Hen—First (96), R. E. West.

White Silkie Pullet—First, R. E. West.

CAPONS.

AWARDS.

Any Variety Capons—First (6), J. L. Dickerson; second (11), J. L. Dickerson.

PIGEONS.

EXHIBITORS.

Edwin Burke, Des Moines, Iowa; Mrs. Blanche Harris, Des Moines, Iowa; Allen Ramsey, Des Moines, Iowa; Virginia Wagner, Des Moines, Iowa; R. E. West, Altoona, Iowa; Frank Fortmass, Dyersville, Iowa; Wib. F. Clements, Agency, Iowa.

AWARDS.

Pair Homing Pigeons—First (1-1), Mrs. Blanche Harris; second (2-2), Mrs. Blanche Harris; third (3-3), Mrs. Blanche Harris.

Pair Fantail Pigeons—First (18-19), Virginia Wagner; second (Agate and Yellow), Allen Ramsey; third (2-41), R. E. West.

Pair Pouter Pigeons—First (Agate and Blue), Allen Ramsey; second, Frank Fortmann; third, Frank Fortmann.

Pair Swallow Pigeons—First (78), Wib. F. Clements; second (93), Wib. F. Clements.

TURKEYS.

EXHIBITORS.

O. C. Bierma, Mitchellville, Iowa; R. H. Longworth, Polk City, Iowa; F. F. & V. G. Warner, Bloomfield, Iowa.

AWARDS.

Bronze Turkey Cock—First, F. F. & V. G. Warner; second (5), O. C. Bierma.

Bronze Turkey Cockerel—First (1240), F. F. & V. G. Warner.

Bronze Turkey Hen—First (1214), F. F. & V. G. Warner.

Bronze Turkey Pullet—First (1238), F. F. & V. G. Warner.

White Holland Turkey Cock—First (44), R. H. Longworth.

White Holland Turkey Cockerel—First (40), R. H. Longworth.

White Holland Turkey Hen—First (35), R. H. Longworth.

White Holland Turkey Pullet—First (36), R. H. Longworth.

DUCKS.

EXHIBITORS.

M. H. Buck, Prairie City, Iowa; Garrie R. Bishop, Mitchellville, Iowa; W. O. Coon, Des Moines, Iowa; T. H. Kaldenberg, Pella, Iowa; R. H. Longworth, Polk City, Iowa; Beryl Parks, Des Moines, Iowa; F. F. & V. G. Warner, Bloomfield, Iowa; Harry N. Webster, Runnells, Iowa; R. E. West, Altoona, Iowa; C. D. Warren, Altoona, Iowa.

AWARDS.

White Pekin Drake, Old—First (1236), F. F. & V. G. Warner; second (93), Harry N. Webster.

White Pekin Drake, Young—First (1150), F. F. & V. G. Warner.

White Pekin Duck, Old—First (930), F. F. & V. G. Warner; second (146), F. F. & V. G. Warner; third (24), Harry N. Webster.

White Pekin Duck, Young—First (1142), F. F. & V. G. Warner.

Colored Rouen Drake, Old—First (52), R. E. West.

Colored Rouen Drake, Young—First (138), R. E. West.

Colored Rouen Duck, Old—First (142), R. E. West.

Colored Rouen Duck, Young—First (85), R. E. West.

Black Cayuga Drake, Old—First (4), R. E. West.

Black Cayuga Duck, Old—First (10), R. E. West.

Black Cayuga Duck, Young—First (150), R. E. West.

Colored Muscovy Drake, Old—First (74), M. H. Buck; second (29), R. E. West; third (65), M. H. Buck.

Colored Muscovy Duck, Old—First (19), R. E. West; second (6), M. H. Buck; third (27), M. H. Buck.

White Muscovy Drake, Old—First (70), R. E. West.

White Muscovy Duck, Old—First (8), R. E. West.

Fawn and White Indian Runner Drake, Old—First (25), Garrie R. Bishop; second (68), Wib. F. Clements; third (540), T. H. Kaldenberg.

Fawn and White Indian Runner Drake, Young—First (67), Wib. F. Clements; second (70), Wib. F. Clements; third (4), Beryl Parks.

Fawn and White Indian Runner Duck, Old—First (564), T. H. Kaldenberg; second (90), Wib. F. Clements; third (509), T. H. Kaldenberg.

Fawn and White Indian Runner Duck, Young—First (74), Wib. F. Clements; second (89), Wib. F. Clements.

White Indian Runner Drake, Old—First (24), Wib. F. Clements; second (9), C. D. Warren; third (20), Wib. F. Clements.

White Indian Runner Drake, Young—First (75), Wib. F. Clements; second (5), Wib. F. Clements.

White Indian Runner Duck, Old—First (24), C. D. Warren; second (502), T. H. Kaldenberg; third (600), T. H. Kaldenberg.

GEESE.

EXHIBITORS.

O. C. Bierma, Mitchellville, Iowa; Wib. F. Clements, Agency, Iowa; Weir Hart, Bondurant, Iowa; R. V. Keeney, Avon, Iowa; R. E. West, Altoona, Iowa.

AWARDS.

Gray Toulouse Gander, Old—First (47), R. E. West; second (7), R. V. Keeney.

Gray Toulouse Gander, Young—First (9), R. V. Keeney; second (91), R. E. West.

Gray Toulouse Goose, Old—First (11), R. V. Keeney; second (59), R. E. West; third (8), R. V. Keeney.

Gray Toulouse Goose, Young—First (10), R. V. Keeney; second (87), R. E. West.

White Embden Gander, Old—First (83), Wib. F. Clements; second (1), O. C. Bierma; third (100), R. E. West.

White Embden Gander, Young—First (92), Weir Hart.

White Embden Goose, Old—First (38), R. E. West; second (2), O. C. Bierma; third (96), Wib. F. Clements.

Gray African Gander, Old—First (33), R. E. West; second (27), R. E. West.

Gray African Gander, Young—First (83), R. E. West.

Gray African Goose, Old—First (66), R. E. West.

Gray African Goose, Young—First (68), R. E. West.

Brown Chinese Gander, Old—First (63), R. E. West.

Brown Chinese Gander, Young—First (34), R. E. West.

Brown Chinese Goose, Old—First (25), R. E. West.

Brown Chinese Goose, Young—First (83), R. E. West.

White Chinese Gander, Old—First (70), R. E. West; second (85), Wib. F. Clements; third (94), Wib. F. Clements.

White Chinese Gander, Young—First (87), Wib. F. Clements; second, (84), Wib. F. Clements.

White Chinese Goose, Old—First (100), Wib. F. Clements; second (68), Wib. F. Clements; third (95), R. E. West.

White Chinese Goose, Young—First (77), Wib. F. Clements; second (68), Wib. F. Clements.

EGG-LAYING CONTEST.

EXHIBITORS.

W. Harvey, Des Moines, Iowa; B. R. Harmon, Springfield, Mo.; C. D. Warren, Altoona, Iowa.

AWARDS.

First (475-476-477-478-479-480), W. Harvey; second (481-482-483-484-485-486), W. Harvey; third (217-218-219-220-221-223), B. R. Harmon; fourth (70-49-66-99-2-11), C. D. Warren.

BOYS' AND GIRLS' POULTRY CONTEST.

EXHIBITORS.

Florence Alexander, Indianola, Iowa; Esther Brazelton, Ankeny, Iowa; Y. H. Ellis, Altoona, Iowa; Marion D. Creath, Ottumwa, Iowa; Helen Ruth Parks, Des Moines, Iowa; Lucy Morrison, Adelphi, Iowa; Theresa Williamson, Des Moines, Iowa; Jay A. Mitchell, Des Moines; L. Gertrude Ketchem, Des Moines, Iowa.

AWARDS.

Best Design Made from Feathers of Any Domestic Fowl—First, Marion D. Creath.

Model of Poultry House, Made from Any Kind of Material—First, Jay A. Mitchell; second, Helen Ruth Parks; third, Theresa Williamson.

Largest Hen's Egg—First, Y. H. Ellis; second, L. Gertrude Ketchum.

Best Dozen Eggs—First, J. M. Williamson; second, L. Gertrude Ketchum; third, Richard Peck.

Best Essay on Poultry Industry of Iowa—First, Theresa Williamson.

Best Half Dozen Colored Easter Eggs—First, Helen Ruth Parks.

Best Design Made of Egg Shells—First, Jay Mitchell.

Best Cake Containing Three or More Eggs—First, Helen Ruth Parks; second, Florence Alexander; third, Lucy Morrison.

Best Pen Made from Quill Feather—First, Theresa Williamson.

REPORT OF BOYS' JUDGING CONTEST, IOWA STATE FAIR AND EXPOSITION, 1914.

Name	Draft Stallion	Draft Mares	Beef Steers	Dairy Cows	Brood Sows	Fat Hogs	Corn	Corn	Total Score	Rank
Clement Miller, Fairfield	96	89	96	85	87	87	72	50	662	1
Lee Aldrich, Rowan	88	86	82	73	63	86	85	77	640	2
Raymond Teachout, Imogene	90	75	92	74	86	88	64	70	639	3
Bryce Binnall, Dow City	94	56	93	79	91	79	82	44	618	4
Arthur McQuirin, Osceola	94	43	82	72	72	86	84	81	614	5
Leland Roberts, Jefferson	35	74	90	77	78	76	87	87	604	6
John Knotek, Washington	96	79	94	82	82	73	47	50	603	7
Chas. Grandgeorge, Eagle Grove	87	70	90	61	90	83	53	68	602	8
Donald F. Malin, Tama	95	53	94	87	94	87	48	41	599	9
Arthur Meints, Dixon	91	82	90	67	75	70	45	76	596	10
Russell Mowry, Orchard	83	76	77	56	72	85	88	52	589	11
Lyle A. Sergeant, State Center	84	68	81	60	90	87	74	43	587	12
Marvin Parsons, Carroll	80	66	90	85	77	80	63	43	584	13
Clem O. Flanders, Rome	83	72	77	58	81	85	45	81	582	14
Fred J. Paulus, Hampton	98	42	96	55	86	88	62	53	580	15-16-17
Austin Hogan, Duncomb	93	51	70	67	76	87	55	81	580	15-16-17
Harry Mathias, Clarion	88	54	77	73	90	68	81	49	580	15-16-17
Maurice Phelps, Glenwood	79	61	90	72	54	77	81	63	577	18
Gordon Jeffers, Cresco	97	58	90	71	80	68	55	57	576	19
Geo. Teachout, Imogene	87	53	89	73	79	77	43	73	574	20-21
F. Stuart Cleworth, Tama	88	81	94	65	63	94	38	51	574	20-21
Earl Boyer, Stanton	90	51	91	86	51	87	69	47	572	22
Arthur E. Bell, Underwood	91	52	87	80	83	52	53	73	571	23
James Loughridge, Delta	85	73	88	86	55	85	56	40	568	24
Harry Tyrrell, Belmond	88	53	90	62	74	88	44	66	565	25
Floyd Doctor, Clarion	95	69	88	51	52	73	80	56	564	26
Chester Viers, Des Moines	95	47	95	83	68	87	33	54	562	27-28
Ancel N. Croft, Kirkman	83	87	87	54	80	67	43	61	562	27-28
Raymond L. Whannell, Traer	88	80	85	84	82	62	45	35	561	29-30-31
Murle Mills, New Providence	85	74	85	76	53	88	50	60	561	29-30-31
Will Lawson, Norwich	72	62	89	62	79	84	41	72	561	29-30-31
Paul Shirk, Goldfield	46	93	81	67	90	82	44	57	560	32-33
Myrl Martin, Goldfield	87	76	78	67	53	82	40	77	560	32-33
Allan Hicks, New Market	72	42	86	87	80	90	40	58	555	34
Arthur Runft, Reinbeck	83	43	84	62	56	85	63	58	554	35
Albert Clark, Clarion	92	45	84	71	81	78	55	40	553	36
Harold Johnston, Corning	79	44	82	79	82	87	51	48	552	37-38
Ernest Robinson, Yale	50	53	85	56	83	81	70	74	552	37-38
Cecil S. Wilson, Morning Sun	90	37	37	85	78	87	81	55	550	39
Harold Breckenridge, Clarion	94	48	90	60	82	83	41	41	549	40
Frank Guthrie, Newton	94	59	47	93	75	87	49	44	548	41
George Garrett, Braddyville	70	50	79	79	46	90	79	52	545	42
Theron Jacobson, Floyd	82	87	57	79	51	63	68	57	544	43
Ambrose Link, Waukon	78	55	80	40	68	79	71	69	540	44-45
Forest M. Carhartt, Albia	78	62	88	66	79	81	39	47	540	44-45
Harold McBinnie, Boone	81	54	82	56	78	84	44	57	536	46
Marion Fowler, Battle Creek	82	58	92	57	50	75	75	43	532	47-48-49-50
Clifton Richardson, Holmes	82	70	84	61	51	77	64	43	532	47-48-49-50
Ivan Fuller, Fremont	82	62	92	51	80	85	41	39	532	47-48-49-50
Jens Rasmussen, Coulter	59	67	86	67	70	77	57	49	532	47-48-49-50
Harley Blau, George	90	47	81	65	80	81	52	35	531	51
Milton Nuzum, Wick	95	55	84	72	56	80	44	44	530	52-53
Ivyl E. Naylor, Stratford	80	71	87	59	86	58	45	44	530	52-53
Louis Shaffer, Walker	90	55	78	69	67	52	77	40	528	54-55
Vern McFarlane, Oelwein	88	42	91	66	78	56	74	33	528	54-55
Earl Dye, Blakesburg	78	53	81	56	75	79	62	42	526	56
Horace Thomas, Dow City	88	74	43	81	80	43	58	56	523	57-58
Fred Day, Afton	92	50	75	87	78	55	42	44	523	57-58
Newman Engh, Goldfield	80	73	92	52	68	79	37	41	522	59
Harold Homer, Russell	85	40	85	62	84	70	62	31	519	60
Homer S. Lucas, Greene	73	59	84	69	54	80	55	43	517	61-62
Frank Christie, Belmond	77	88	73	63	77	83	48	62	517	61-62
Mont Sanderson, Keosauqua	74	67	93	67	38	75	64	38	516	63
John A. Baumhover, Carroll	88	48	87	65	55	77	37	58	515	64
Robert Neal, Sac City	57	80	88	81	69	61	38	40	514	65

REPORT OF BOYS' JUDGING CONTEST—CONTINUED

Name	Draft Stallion	Draft Mares	Beef Steers	Dairy Cows	Brood Sows	Fat Hogs	Corn	Corn	Total Score	Rank
Frank Sonnefelt, Rose Hill	92	----	76	58	82	85	69	51	513	66–67
Dewey Hawker, West Liberty	50	46	94	74	89	83	37	40	513	66-67
Louis Lord, Iowa City	80	56	84	59	82	66	39	46	512	68
Leroy Truckenmiller, Sibley	72	80	78	56	68	76	39	42	511	69
Claire Cristie, Belmond	40	68	91	89	44	81	44	52	509	70
John W. McDonald, Clarion	87	47	89	73	56	87	37	32	508	71
Leland Dawson, Aurelia	95	50	90	75	23	67	46	60	506	72
Ellsworth Bailey, Unionville	57	75	85	65	67	58	43	46	504	73
Clark Wolf, West Liberty	76	71	90	68	45	64	45	44	503	74–75
Vincent Corrigan, Fredericksburg	80	55	43	60	48	77	83	57	503	74–75
L. Roy Rounds, Le Mars	88	52	80	71	55	82	34	40	502	76–77
Wallace McKee, Indianola	80	44	83	68	56	83	45	43	502	76-77
Howard Evans, Webster City	76	40	91	71	55	79	46	43	501	78–79
Ralph Erickson, Dows	65	50	84	88	69	63	49	32	501	78–79
LuVerne Fogelman, Sutherland	73	78	60	70	66	83	39	30	499	80–81
Cecil Hillman, Deep River	87	48	83	60	46	76	66	33	499	80–81
Lloyd Dickinson, Wilton Junction	85	65	88	60	77	29	39	53	496	82–83
Oscar Olson, Linn Grove	70	49	90	35	69	70	71	42	496	82–83
Earl Griffith, Swea City	77	47	86	75	37	74	49	50	495	84
Max Baher, Belmond	72	38	70	77	64	76	59	29	485	85
Carl E. Krapf, Rowley	74	65	87	60	47	60	52	39	484	86
Herbert Armbrecht, State Center	77	34	80	93	53	64	35	46	482	87
Oliver Tellman, Clarion	39	47	80	58	87	78	53	39	481	88
Wm. Marshall, Battle Creek	83	48	61	70	43	73	40	59	477	89
Raymond P. Joseph, Hopkinton	86	43	84	69	51	52	33	52	472	90
Elmer C. Ketcham, Spencer	62	70	80	89	41	40	39	49	470	91
Wm. Conn, Parkersburg	83	59	41	66	55	52	69	42	467	92
Spencer Mayo, Cedar Falls	62	93	81	81	85	63	----	----	465	93
Wallace Donaldson, Woolstock	88	72	86	70	82	47	----	----	445	94
Lewis Vetter, Calamus	86	60	38	53	53	70	41	42	443	95–96
Cecil Gates, La Porte City	49	64	82	64	78	35	35	36	443	95–96
Nelson Hauge, Dows	65	25	64	56	64	59	42	57	432	97
Cecil Conner	72	65	76	38	40	58	39	33	421	98
Arthur Larson, Eagle Grove	80	52	82	66	66	51	----	----	397	99
Lee Bayless, Kellerton	70	50	80	40	53	----	30	70	393	100
Carl Lewis, Eagle Grove	80	69	77	78	39	41	----	----	384	101
Martin Elvebak, Keister, Minn.	70	----	75	46	32	64	39	49	375	102
Arthur Rhodes, Dows	55	23	66	56	35	62	20	25	342	103
Glen Anderson, Sumner	30	20	42	38	28	69	57	33	317	104

PART V

Proceedings of the Winter Meeting of the Iowa Swine Breeders Association, 1914.

The winter meeting of the Iowa Swine Breeders' Association was held January 9, 1914, in connection with the annual farmers' short course at the Iowa State College of Agriculture and Mechanic Arts at Ames. We are indebted to the Iowa Homestead for the following report of the meeting, which report appeared in the Homestead in its issue of January 15th:

An unusually interesting and important meeting was held by the Iowa Swine Breeders' Association last week at the Iowa Agricultural College. There were those among its members who claimed that this was the best meeting ever held by the association. The program was opened by Prof. John M. Evvard, who is in charge of swine experimental work at the Iowa Station. He presented the result of his work in the feeding of forage crops and corn supplements to swine. Professor Evvard first pointed out the respects in which corn was deficient as a food for animals and then proceeded to show how this deficiency can best be met. Forage crops, when they can be had, offer the best means of meeting this lack and among these crops rape and alfalfa stand out pre-eminently. In fact, rape is without a peer; it is the best of all forages for swine, feeding value alone considered. It is second to alfalfa only in number of pigs which it can support per acre (twenty-five for rape and forty-three for alfalfa) and in ease of management. In order of general desirability red clover comes next, followed by blue grass and sweet clover. Soy beans and cowpeas may have great virtue when used properly for certain purposes, but can lay no claim to be profitable swine forage crops under Iowa conditions.

But forage crops alone are insufficient to produce the best results; some concentrated supplement must be fed. The concentrated protein feeds which have won first rank in this series of experiments are oil meal and tankage, or meat meal. Oil meal seems to contain some toxic substance, at least some property which renders it unattractive to hogs when it is fed alone. They neglect it, even ignore it, and fail to consume enough to properly balance their ration when fed in a self feeder by itself. Tankage does not have this disadvantage, and does not require mixing to be fed.

The ways of the pig are indeed past understanding. The mystery of the digestive economy of a hog is well brought out by some data on mixing oil meal and tankage which Professor Evvard presented. The cost per 100 pounds gain when oil meal was used as a corn supplement was $5.62. When tankage was used as a supplement the cost per 100 pounds gain was less, $5.30. Now, any hog which understood even the rudiments of mathematics would know that, if it received a ration in which these two feeds were mixed in equal proportion, it should make 100 pounds gain at an average of these two costs; i. e., $5.46. A hog works in total disregard of this rule, however, and the cost of 100 pounds gain when oil meal and tankage are mixed half and half is only $5.04, considerably less than when either food is given alone. This fact amounts virtually to a demonstration of the proposition, that the only way to find out how best to feed a pig is to feed it, the several possible conditions and combinations must be tried, the results carefully recorded, and the verdict given on the evidence obtained. A never-ended work lies here for the experimental animal husbandman.

However, the pig is not altogether without knowledge on dietary matters. In fact, he shows astonishing skill in compounding his own ration, exhibiting in this regard, a fineness of discrimination not possessed by man himself. A bunch of sows weighing 260 pounds was divided into two lots and both put on the same forage. Lot 1 received shelled corn in a self feeder; the sows gained 2.4 pounds a day and 457 pounds of corn were required for each 100 pounds of gain. Lot 2 was put in the care of an expert feeder with instructions to secure the very greatest gains possible, but the corn was fed out by hand; the sows only gained 2.09 pounds a day and there were required for each 100 pounds gain 478 pounds of corn, twenty-one more pounds than when the corn was taken out of a self feeder. Or again, two lots of pigs were fed on shelled corn and tankage. The pigs in Lot 1 had access to the corn and the meat meal, each in a self feeder, at whatever moment of the day or night they chose to nibble. Lot 2 was fed with greatest possible care, by hand.

	Daily gain	Lbs. corn per 100 lbs. gain
Lot 1.................	2.35	470
Lot 2.................	2.13	483

The results, as shown in the above table, indicate the advisability, within limits, of giving to the pigs greater freedom in eating what and when they choose.

In the discussion which followed Professor Evvard's report it developed that certain hog raisers discriminated against tankage because of its supposed liability to carry hog cholera infection. Professor Evvard pointed out that although undesirable, animal refuse, often cholera-infected hogs, is used in tankage manufacture, nevertheless, in the process of manufacture the mass is raised to a heat great enough to kill all cholera germs. The only chance of meat meal carrying cholera infection is from contamination while it is being sacked, or afterwards, by contact with a contaminated body. In well-organized packing houses, this possibility is carefully guarded against, and this most excellent source of protein meat meal can be fed with perfect safety if purchased from a reputable manufacturer. Also the quality of the tankage should be looked to; unscrupulous dealers frequently attempt to substitute a low grade of tankage intended for fertilizer for the higher grade manufactured for feeding purposes.

Mr. Cyrus Tow, Norway, Iowa, superintendent of swine at the Iowa State Fair, then greeted the members of the association. He declared his intention of providing for the exhibitors of swine at the state fair every convenience and comfort which his best efforts could secure for them, and solicited suggestions for the management of the swine department at the 1914 show.

Mr. McFadden, secretary of the American Poland China Association, gave a short address which was pregnant with the promise of prosperity. An office such as the one managed by Mr. McFadden is a fairly good barometer of the pure-bred swine business, for interest in any one breed stimulates interest in all. The barometer shows a raise. In the face of the affliction and disaster which have this year confronted the swine industry each month has seen an increase in registrations of Poland-China swine and in December it was greater than a year ago; 1913 was the third largest year's business ever conducted. Interest is spreading into the far West to a remarkable degree. There are now on file in Mr. McFadden's office orders for three car loads of pure-bred swine, one to Canada, Tennessee and Washington.

During the evening the association members met in conjunction with the short-course students in the agricultural assembly. In an excellent program of four addresses, lasting two hours, swine cholera, the "black beast" of the hog raiser, was set upon and conspired against. Dr. W. B. Niles drove the beast into the open by a thorough going over of the ground; Dr. C. H. Stange, director of the state serum laboratory, displayed the weapons with which to attack him; J. S. Thatcher, manager of Iowana Farm, described an engagement with the beast, in which the enemy was defeated, and Prof. W. J. Kennedy, director of the extension department, connived and plotted for his complete extermination.

Dr. Niles' address was in the nature of a general survey; the nature, methods of contagion, symptoms and remedies were given. Dr. Stange described the serum plant and the manufacture of serum; he also pointed out the utter inability of the state serum plant as it is now equipped to produce enough serum to supply one-seventh of the hogs of Iowa. The plant has sent out serum to 1,200 herds of hogs and has over a million cubic centimeters of serum in its store rooms. In only three cases was loss in these herds serious after the administration of the treatment. In one of these cases death proved to be due to worms; in one case the disease was present, unrecognized, and the third case is being investigated.

Mr. Thatcher pointed out that in number Iowa has 14 per cent of all the hogs in the United States. In value 17 per cent of all hogs are found in Iowa, but of all hog losses in the United States, Iowa bears the burden of 25 per cent. This situation demands immediate and decisive action; the entire industry is threatened, many regions report a loss of 40 per cent of all hogs. The saving element in the situation is that these ravages can be stopped. A means is at hand to absolutely prevent further loss if its use is resolutely continued. This means is the anti hig-cholera serum, and by its use Iowana Farm has passed from a turmoil of contagion and death to a condition of serene confidence that the $20,000 stock of hogs is safe. In effect, the only safe policy is to create and maintain an immune herd by administering the simultaneous treatment to every hog brought into the herd, and to every pig raised on the place, some time before weaning. Since 1912 the Iowana Farm has been working under this system, 1,500 pigs having been treated during this time, some of them as young as eleven days old, and not a single head has been lost from cholera, though in the midst of a badly-infested community.

In his closing address Professor Kennedy declared that no permanent progress can be made in eradicating hog cholera till the use of serum becomes practically universal in infected regions. This general use of serum will never come to pass until farmers develop perfect confidence in the efficacy of the serum, and this confidence, in turn, awaits the time when all serum on the market shall be standardized and shall be worthy to be trusted.

About 100 members remained in the room after the program of speakers, to take part in the adjourned business meeting of the association. The meeting was called at 9:30 o'clock. The plea made by Professor Kennedy was of the sort calculated to incite to action and it bore definite fruit before final adjournment. Mr. Thatcher urged legislation in regard to federal inspection and standardization of all serums put upon the market. At this point Dr. Stange called attention to the fact that certain federal restrictions already controlled commercial serum plants and invited Dr. Niles to describe the working of this law. The law provides in effect that commercial serum plants doing an interstate business must operate under a federal license. All licenses must be renewed annually, the grounds for issuing licenses being the result of an annual inspection. The quality of the serum is also tested from time to time.

Professor Kennedy pointed out the shortcomings of this law. When we use the simultaneous method we are using the disease—we are playing with fire, and cannot risk poor serum. It will not do to get good serum only part of the time; the only time when it is safe to stop is when every drop of serum on the market is tested, bottled and sealed under federal supervision. Then all serum will have a constant value, its use will have a constant and uniform effect, farmers will grow to have trust in it and permanent progress will be made possible.

Mr. Thatcher now offered the following resolutions: Resolved, that the Iowa Swine Breeders' Association request Senator W. S. Kenyon to introduce a bill into the United States senate requiring the placing of a federal inspection at each commercial hog-cholera serum plant, to test all serum before it is distributed, either for state or for interstate shipment.

It is indeed fitting that the state of Iowa should, through its Swine Breeders' Association, thus instigate legislation which will inevitably prove of deep significance for the swine industry the country over in making possible a campaign of complete eradication of the plague of hog cholera.

The resolution was unanimously adopted and immediately forwarded by wire to Senator Kenyon.

One View of Automobiles Parked at the 1914 Iowa State Fair and Exposition.

PART VI

Extracts from State Dairy Commissioner's Report of 1914

W. B. BARNEY, Commissioner

In handing you this, the Twenty-eighth Annual Report of the Dairy and Food Commissioner, it is with some degree of satisfaction that I am able to call to your attention and that of the incoming Legislature, the continued progress and development of this department.

When the 35th General Assembly adjourned, we found this department responsible for the enforcement of the following laws:

DAIRY LAW
PURE FOOD LAW
AGRICULTURAL SEED LAW
CONCENTRATED FEEDING STUFFS LAW
CONDIMENTAL STOCK FOOD LAW
PAINT AND LINSEED OIL LAW
TURPENTINE LAW
WEIGHT AND MEASURE LAW
SANITARY LAW
COLD STORAGE LAW
COMMERCIAL FERTILIZER LAW and
CALCIUM CARBIDE LAW.

The last five of these laws were enacted by that body during the last session.

We know of no laws on our statute books that are of more importance or affect a larger number of people, than do the Weight and Measure and Sanitary Laws. Some states of no greater population than Iowa employ more people in the enforcement of their Weight and Measure Law alone than we have in this department for the enforcement of the twelve laws with which we are charged. We only speak of this to call the attention of the Legislature to the importance and magnitude of this work.

While there is only a small per cent of the people engaged as purveyors of different commodities that seek to short weight or in other ways swindle the consumer, eternal vigilance on the part of some one is about the only protection for the public and the honest dealer. We have every reason to believe that the people are going to demand the protection that they are entitled to and that the work in this department along this line is going to materially increase in the future. When you consider how far reaching the results of this work may be made and that practically all the people of our commonwealth are either directly or indirectly affected we are surprised that they have been so slow in asking for relief.

As to the Sanitary Law which has been effective about eighteen months, the results show for themselves. Eighty or ninety per cent of the stores and other places that sell food products are in first class shape. Those that have not cleaned up will have to drop out for the public will no longer patronize the poorly kept insanitary place. Many hundred thousands of dollars have been invested in new and up to date show cases and equipment by the grocers, butchers, and others selling food products. We have some times been at a loss to know why it was necessary to pass a law obliging these people to properly care for and protect their products from dust, dirt, and flies, when the up to date dry goods, clothing, hardware and jewelry merchants have been giving their wares proper protection for several years.

Many new slaughter houses have been built and old ones remodeled. We have tried to be as reasonable and lenient in the enforcement of this law as possible where it applies to these places, for we feel there is a great advantage in killing as much of our meat at home as we can, saving the freight on these products both ways.

There are many sections of this law that can well be applied to the dairy work and have been and will be most helpful. While this is primarily the dairy report of the department, we have thought best to refer briefly to these two laws on account of their importance in connection with the dairy work.

THE CREAMERY PROMOTER.

The creamery promoter has been rather more active for the last year than for some time past. Several plants have been built and equipped on which the owners could have saved anywhere from

$1,000 to $3,000 if they had called on the Dairy and Food Commission or the Iowa State Agricultural College at Ames for assistance. This department is now well equipped with blue prints, plans, and specifications, also cost of machinery and equipment, constitution, by-laws and all other information necessary. We have men in the department that have specialized in this work and their services may be secured without cost where there is a reasonable certainty of a sufficient number of cows (600 to 800) assured, and a desire on the part of the community to build and support a plant.

We deplore the fact that the promoter pays so little heed to the future success of most plants they construct. They build an undersized, cheap building, put in much of the equipment that would be obsolete in an up to date factory, charge a big price for the outfit and leave it for this department to nurse along for several years. We recently heard a new definition for the promoter that can well be applied to most creamery promoters,—"A man who sells something he hasn't got, to people who pay for something they never get."

CENTRALIZERS OR CENTRAL CHURNING PLANTS.

Some of these plants have been unusually active in the last year in their efforts to put the farmers' co-operative or small individual creamery out of business. By reference to a map shown in another part of this report, you will notice that of the 496 creameries in this state about 400 of them are located in the northern two-thirds and about 96 in the southern third of the state. We think there is no disputing the fact that the prices paid for butter fat in any of the many well managed co-operative creameries range from 3c to 7c more than the price paid by the centralizer. This being true, we feel that this department is fully justified in giving all possible assistance and support to the creameries already organized, and encouragement and help to the communities where there is reason to believe there is sufficient interest and enough cows to make a paying proposition of a plant.

We realize that the men operating the centralizers are in a legitimate line of trade. They make dairying possible in sections where there would be little or no market for butter fat if it were not for the one they offer. They are fully entitled to just and fair treatment. So long as we are at the head of this department its policy will be "a square deal to all and favors to none."

We have been much surprised within the last year to find that in practically every case where there was sufficient dairy sentiment aroused so there were prospects of a plant being built, the price of butter fat was advanced by buyers for the centralizers from three to four cents by the time the creamery was ready to begin business, and that twelve or fifteen miles distant the same old prices were paid. It is apparent that the motive behind this is a desire on the part of the big plant to kill off the local creamery. We believe this unfair and unbusiness like and that if they can pay these prices in competition to a local creamery they should pay them where this competition does not exist or where they come in competition with other centralizers. This is our fifth report since taking the office of commissioner, and we have never been obliged to refer to troubles of this nature in our former reports. We had hoped that the rather unpleasant relations that existed several years ago between these two branches of the dairy industry was a thing of the past.

When the position of commissioner was tendered, it was accepted without entanglement or obligation to any set of men or interests. We expect to direct the efforts of the department along lines, that in our judgment will be of greatest benefit to dairymen and farmers. If by helping to organize a creamery in a community, the dairyman may be benefited to the extent of an increase of from three to six cents a pound for his butter fat, we expect to render this assistance even though the centralizer may lose the business.

COST OF MAINTAINING THE DEPARTMENT.

In looking over the laws under which this department was organized, there is nothing that we find that gives reason to believe that it was the intention of the Legislature to make the department which is a law enforcing body, self supporting.

The Government appropriates many hundred thousands of dollars yearly for the enforcement of the Dairy and Food Laws.

When the present commissioner took charge of the Department in 1909, the annual revenue from licenses, tax tags, etc., amounted to $9,593.24; for 1910 the amount turned over to the State Treasurer was $17,435.30; for 1911, $20,892.97; for 1912, $22,049.02; for 1913, $36,504.52; and for the year ending November 1, 1914, the earnings of the Department are $43,842.40.

As all fines under the Food laws go into the county school fund in the county where these cases are prosecuted, this should be added to the earnings. At a conservative estimate this amount would reach $5,500, making a total of $49,342.40.

As compared with an adjoining state with 150,000 less people, we find that for maintaining the Dairy and Food Department for the year 1912, the cost per capita was two and ninety-four hundredths cents for that state, and for Iowa fifty-eight hundredths of one cent.

We beg leave to call your attention to the fact that no other State Dairy and Food Department has the number of laws for enforcement that we have, and that the greater the amount of work, the more help is necessarily required to properly look after the work, and the greater the cost. In some states the same work that is done by this department is divided up—two, three, or four commissions or departments doing the work. We do not speak of this because we think it a good or economical plan but to call the attention of the Legislature to the fact that the criticism by some people on account of a multiplicity of commissions does not hold good so far as this department is concerned, with its twelve different laws to enforce.

WORK OF INSPECTORS.

We have been trying out the plan of having some of our inspectors do all kinds of work. Those designated in the list given in this report, as "Assistant Dairy Commissioners and Food Inspectors," have been looking after the enforcement of all of the different laws in the territory they cover. By reference to our former reports you will find that this plan of work originated in the Department some four years ago, and not with the Committee on Retrenchment and Reform, or the special Efficiency Committee as some have been led to believe.

We put on two men over four years ago so that we might know from experience whether there was any advantage either by reason of saving in expense or efficiency in handling the work. If we only had the enforcement of a few laws the plan would be quite acceptable and in certain territories it works fairly well, even with the enforcement of the twelve different laws. In other sections of the state, we find it practically impossible to handle the work in this way. We have found that the work of an inspector, if properly looked after, is a ''real man's job,'' and that this is especially true since the sanitary and weight and measure laws have been added. There is no saving in expense under this plan, and as we all know that this is an age of specialists in all lines, we do not know why it should not apply in a measure to work in this Department. If houses like Marshall Field & Company and Hibbard, Spencer, Bartlett & Company, find it necessary to employ from two to five men who visit Des Moines and other large cities in the state, representing the different lines of merchandise they have put on the market, they do it because these men are specialists in the various lines. In the memory of many middle aged people, the doctor acted as surgeon, dentist, eye, ear, nose, and throat specialist, veterinarian, etc. Today, specialists in these lines do this work and the man who claims to make good in all these various lines is generally sized up as a fraud.

NEW OFFICE BUILDING MUCH NEEDED.

Since the enforcement of the Weight and Measure Law has been placed in this department and about $2,000.00 worth of equipment has been added for this purpose, there is more reason than ever for a move on the part of the incoming legislature to provide better quarters for this and several other departments. The law reads as follows:

> ''The State Sealer shall take charge of the standards of the state, causing them to be kept at the Capitol in a fire proof building, belonging to the state.''

Besides this, we have about $8,000.00 worth of laboratory and other equipment, making in all $10,000.00 worth of property belonging to the State. The records of the department since it was organized would go with the above, should the building take fire as it is apt to do at any time on account of poor wiring and the general bad and dilapidated conditions on account of age.

CREAM GRADING IN IOWA.

Again this year the creameries over the state have started an agitation leading toward the grading of cream and paying according to quality. For several months a few local creameries have been working on a quality basis, and the improvement in the quality of their butter and the general betterment of the conditions on the farm has been gratifying. There should be no market for an inferior grade of cream, and when this time comes the careless, unclean, dairyman will either have to improve his product or get out of business.

The whole system, if it can be called a system, of buying cream irrespective of quality is absolutely wrong. The packer will not pay the same price per pound for a canner cow that he will for a finished steer; the grain dealer will not offer the same price for moldy grain that he will for a clean, dry product; it is equally absurd for a creamery to offer the same price for cream in all stages of deterioration, and expect to make good butter out of it. Many creameries are struggling along with this poor quality cream, doping it with neutralizer, adding a large percentage of starter in an endeavor to cover up the undesirable flavors, and then trying to pawn it off on the unsuspecting consumer as first grade butter.

The Dairy and Food Commission of the State of Iowa will use every means to bring about the grading of cream and paying therefore according to quality or grade. The best interests of dairying in this state demand that this system be adopted, and the following grades have been established:

Extra—Special grade cream is sweet cream, suitable for table use, and such as will not curdle in hot water, tea or coffee.

First Grade—First Grade cream shall consist of cream that is clean to the taste and smell, slightly sour, containing not to exceed four-tenths of 1% acid, and not less than 25% butterfat, and free from lumps, curd, dirt and all other foreign matter.

Second Grade—Second grade cream is cream that is too sour to grade as first grade, or may have weedy or other undesirable flavors or odors. All other cream shall be deemed illegal.

Illegal Cream—Illegal cream is cream that is very old, rancid, mouldy, dirty or muddy; or that is produced from an unclean separator; or that is stored, handled or transported in unclean cans; or that has been produced, handled, separated, stored or transported in violation of the state dairy, pure food or sanitary law; and the sale, purchase or manufacture of such cream for any human food purpose should be prohibited by statutes.

In the spring of 1911 the dairy and food department at the solicitation of several of the larger creameries of the state, made a ruling governing the buying of cream according to quality. Copies of these rulings were printed in large quantities and distributed all over the state, in fact practically every creamery man and cream station operator had a copy of them tacked up in his place of business to refer to. These rulings were not adhered to by many unscrupulous buyers and thus the good accruing from our efforts would scarcely defray the cost of printing.

Before ''cream grading'' can be put on a workable basis in the state of Iowa or any other state, the cream-station operator must be better trained and equipped. He is not now competent to tell the difference between first and second grade cream and the facilities of the average station are insufficient for handling a perishable product. The operator is put in charge of the station, a check book is placed in his hand, and he is instructed to pay a certain price for butter fat, and under no conditions to vary this price unless competition demands it. Then this cream is placed in ten gallon cans and shipped, without refrigeration, to the place of manufacture from fifty to five hundred miles distant. For these reasons we must maintain that the central plants are largely responsible for the poor grade of cream delivered to our Iowa creameries.

We are in favor of cream grading; we are in favor of law forcing the grading of cream in every creamery of the State. We are ready and willing to lend our assistance to any plant soliciting our aid. We want to see every creamery adopt an honest and conscientious grading system, and stick to it, and when that is done Iowa butter will be greatly enhanced in value.

STATE DAIRY AND BUTTERMAKERS' ASSOCIATIONS.

We are particularly fortunate in having in these two associations a live and active membership, officered by men who are willing to give their time even more than should be expected of them.

The State Buttermakers' Association, though only five years old, is doing a most excellent work and filling into a place that had not been covered by the older association. These associations have each put on very successful conventions. Our contention is that as much good comes out of these meetings by reason of the members getting together and discussing with each other the propositions that they come in contact with as the information they get from papers and addresses.

ICE CREAM.

The past year was not such a busy one for the ice cream makers of the state as the one before. This conclusion is drawn from the reports received from the manufacturers, in regard to their output, from October 1, 1913, to October 1, 1914; the output for the past year, as near as we are able to learn, being about 500,000 gallons short as compared with the year before. This shortage, we feel justified in attributing to the weather conditions, as the past season was remarkable for its lack of hot days and protracted spells of warm weather.

This shortage of 500,000 gallons does not necessarily, however, mean that the manufacturers have not realized as much on the output as heretofore. This can be attributed to the fact that a large number are coming to realize that the only parties who derive a benefit from the low price at the factory are the retailers, and since their margin is great, the manufacturer can increase his profits by increasing the wholesale price without materially decreasing the percentages of profit of the retailers, not sufficiently at least to cause him to discontinue to handle the product or to discourage the consumption of the same. However, there is still room for the manufacturer to increase his revenues by considering the matter of where the larger percentages of profit from the manufacture of the products go, and what effect it would have upon the consumption to raise or lower his price to the retailer.

As before stated, the ice cream output in this state fell short about 500,000 gallons, the output for the entire year being in the neighborhood of 2,500,000 gallons.

Due to the premium paid for butter fat in sweet cream for ice cream making purposes, this output means a great deal to the dairy farmers in the state who are supplying this trade. From reports received, about 1,560,000 pounds of butter fat must have been used in the manufacture of ice cream or about one pound of butter fat from every cow in the state was used for ice cream making purposes. The average premium paid for butter fat in sweet cream for ice cream purposes was about 10c. Therefore, the producer in this state received 10c more for each cow he milked last year because of the ice cream industry. These figures are not very startling but when considered as a whole over $15,000 does not seem to be a very trifling revenue which was added to the income of the producers of the state because of the development of the ice cream industry. We trust that another year will show even greater returns.

We are gratified to be able to say in this report that the Supreme Court of this state saw fit to reverse the decision of Judge McHenry, which declared the law enacted about three years and a half ago, setting forth a standard for ice cream, unconstitutional. We believe that the language used in handing down the reversal of this decision is sufficiently plain so that no one need question but what, in the minds of those on the bench, a state clearly has a right to establish for itself standards by which those manufacturing food products shall be governed. In this state, ice cream is considered one of these products.

We are pleased to state that during the past year, such gross violations of the ice cream law have not come to the notice of the department as did last year.

We wish to again call your attention to the fact that more careful attention should be paid in the factory to the details in making up batches. The time has long since passed when ice cream can be made by guess. Competition is too keen, the trade too critical, and the risk too great to still employ guess methods. We want to urge upon the manufacturer, the necessity of the use of the Babcock test in standardizing the cream used in the making of ice cream. No one would expect to churn skim milk and get butter out of it, neither can the ice cream manufacturer expect to secure a standard product by putting into his mixing vat, skim milk and other products, the butter fat content of which he has no knowledge.

Furthermore, the buying of cream for ice cream purposes should be done only on the butter fat basis. We believe the ice cream maker is entitled to get all that he pays for and are warning him not to buy cream by the gallon unless he is doing so under a contract that calls for a certain percentage of butter fat in the cream, and then this should only be done when the cream is tested regularly. We have two or three reporting a price of $1.20 to $1.50 per gallon paid for sweet cream and will venture to say that these people probably had very little idea as to what they were paying per pound for butter fat or what this cream was testing.

We are pleased to learn that there is an improvement in the condition of the returned empty ice cream containers. An ice cream container is a utensil used in the distribution of a food product and must, under the sanitary law, be kept clean at all times. It, therefore, behooves the retailer or the users of ice cream to wash and keep clean containers in their possession. So far, we have been pursuing the policy of educating these people to the fact that such containers must be washed as soon as emptied. However, in all probability it will be necessary to prosecute a few violators before this evil can, within the next year, be remedied entirely.

We should like to be able to report a greater improvement in the condition of the ice cream factories, and within another year expect to be able to do so. This will mean that during the coming year a number of the manufacturers will have to provide more light and ventilation for their factories, put in better floors, make tight, smooth walls, provide proper ventilation, do more effective screening, and pay more attention to the keeping of the factory and employees in a clean condition. By doing this, the manufacturer will not only avoid conflict with the officials and running the risk of losing his factory license, but trade will be stimulated by such inviting surroundings.

HOMOGENIZED PRODUCTS.

During certain seasons of the year, there is a scarcity of cream suitable for ice cream making purposes. This scarcity has caused the development of the use of the homogenizer and other devices, which are used to reincorporate butter fat with milk serum, either skim milk, natural, or that made by mixing skim milk powder and water.

This department is in favor of the use of any device or idea which will help simplify food producing and distributing problems, but highly disfavors any practice which tends to discourage cleanliness and the use of high grade products to accomplish this result.

Inferior grades of butter should not be allowed to be incorporated in milk and the product put on the market and sold in competition with the pure, fresh article produced under sanitary conditions. It is the intention of this department to have a law enacted regarding the handling of homogenized products, which shall be similar to the ruling issued last May. This ruling is as follows:

''Any product prepared by passing cream through an apparatus which increases its viscosity, and said product contains not less than sixteen per cent of milk fat by weight shall be known and sold under the name 'Homogenized Cream.'

Any product prepared by passing wholesome milk fat together with milk, skim milk, or skim milk powder, through an apparatus, which will cause the products to unite, forming a product having a semblance of cream, and containing not less than 16 per cent of milk fat by weight, shall be known and sold under the name 'Homogenized Process Cream.'

Any product prepared in the semblance of ice cream, which has been made in whole or in part from homogenized process cream and said product contains not less than 12 per cent by weight of milk fat, shall be known and sold under the name, 'Homogenized Process Ice Cream.'

Each container of said homogenized products shall be distinctly labeled with the true name of said product as herein specified, together with the name of the manufacturer or producer thereof.''

We would recommend that in the case of bottled goods such as cream, the word ''Homogenized'' or ''Homogenized Process'' be added to the printing on the bottle caps which have already printed thereon the name of the producer. In the case of ice cream containers for those who use homogenized cream occasionally we would suggest that printed slips, bearing the word, or words, ''Homogenized'' or ''Homogenized Process'' ice cream and the name of the manufacturer, similar in style to those used by express companies in marking packages of goods, be pasted on the packer in conspicuous place. For those using homogenized or homogenized process cream continually in the manufacture of ice cream, we would suggest that the words be stenciled on the packer in a manner similar to that used in marking the brand or the name of the manufacture of the product.

''Wherever homogenized products are sold at retail, a printed sign or signs shall be conspicuously displayed, giving the true name of the product as herein specified, followed by the words, 'Used Here' or 'Sold Here.' All of said words shall be printed on white cards, using black letters, not smaller than 72 point, heavy face, Gothic caps (standard line). No other printed matter of any kind shall appear on this card.

Butter which is made from cream, which previous to its ripening in the hands of the manufacturer, could not be used as sweet cream, or butter, which at the time of its use does not score 93 or more, shall not be used in manufacturing homogenized products.''

The Supreme Court of Iowa has sustained the validity of the law requiring 12% of butter fat in ice cream. The law creating a standard having been upheld, the course of this department is made plain and manufactures and dealers should exercise care to insure that ice cream handled by them is above the standard set by the statute.

OPPORTUNITIES FOR CONDENSERIES AND CHEESE FACTORIES IN IOWA.

The department believes in a greater Iowa. It not only believes in it, but it is going to do what it can to make this state a more desirable and attractive place in which to live, by bettering its conditions and showing its opportunities.

Although our dairying is very well developed, it is not developed as much as it should be when we consider the quantities of these products which are shipped into this state in the form of cheese and condensed milk, besides a large amount of skim milk powder which is used extensively in bakeries, ice cream factories, and creameries.

In order to determine the amounts of these products which are shipped into this state annually, report blanks were sent to all of the wholesale houses in this state, inquiring as to the amounts of cheese and condensed milk which were distributed by their establishments during the year. We received replies from nearly all of these concerns and find that during the past year, the wholesale houses of the state distributed over 10,391,934 pounds of condensed milk, the majority of which was sent in from Wisconsin and Illinois, only one concern reporting having received a portion of their product from Iowa. This does not include large quantities of bulk condensed milk, and milk bought directly from the factories outside of the state, by ice cream makers and bakeries. When we consider that the condenseries of the state produce only six and a half million pounds, we see that in Iowa there is a large field for the development of condenseries, because of the local market which should be filled with home products.

Over 6,765,000 pounds of cheese were distributed by these houses and reports from our factories show that only 433,000 pounds were manufactured in this state.

These two lines of dairy activities should be developed as we have the markets for these products. Dairying is an essential in the permanent system of our state agricultural development and by pointing out the fact that we have home markets for these products to the extent of about 14,000,000 pounds more of condensed milk than is being produced and about 6,500,000 pounds more of cheese than is being manufactured in home factories, this department hopes to be able to stimulate development along these lines.

Reports received show 12 cheese factories in operation as compared with 11 for the previous year. The amount of cheese made is hardly in keeping with the increase in number of factories. It is entirely possible that the causes which contributed in reducing the amount of creamery butter manufactured have operated to reduce the amount of cheese for the same period. The number of creameries in operation at the present time is given as 496, a shrinkage of 22 from a year ago. Some of these plants are fully equipped and will remain closed during the winter months, planning to reopen in time to do much of the spring business. With a normal season, we believe many of the creameries now idle will be organized and manufacture butter during the coming year.

A MOVE TO IMPROVE IOWA BUTTER.

After having made what we know is a marked improvement in the quality of Iowa eggs, we are going to see what we can do to help the quality of the cream.

Nearly a million of what is known as our "Bad Egg Warning" have been sent out within the last year. This is only one of our various plans of educating the producer. We believe in education first, and prosecutions as a last resort. We will have to admit that we were obliged to make a good many prosecutions to get results and get rid of the bad eggs and the end is not yet.

We have sent to the creameries for distribution among their patrons, a large quantity of our bulletin, "Care of Milk and Cream on the Farm." Speakers from this department have addressed Farmers' Institutes, Dairy and Creamery meetings, warning the farmers time and again that there was altogether too much poor cream on the market to make the class of butter that sells for top prices. We realize that a great many of the producers have made a very general improvement in their products by bettering the conditions about their places in the way of putting in ice houses or water tanks for the purpose of cooling and keeping their milk and cream in good condition. Besides this, many new milk houses have been built and others remodeled and cleaned up.

We expect to keep up this kind of work and from this time on, supplement it by having the Assistant Dairy Commissioners, where their time will permit, visit some of the most flagrant violators on the farm. Within the last few weeks we have made several successful prosecutions under the new sanitary law, enacted by the 35th General Assembly. Part of Section 1 reads as follows: "Every dairy, creamery, cheese factory, restaurant, hotel, grocery, meat market, or other place or apartment used wholly or in part for the preparation, sale, manufacture, packing, storing, or distribution of any food, shall be properly lighted, drained, plumbed and ventilated, and conducted with strict regard to the influence of such conditions upon the purity and wholesomeness of food therein produced, and for the purpose of this Act, the term 'food' as used herein shall include all articles used for food or drink.''

The courts have held that milk and cream come within the meaning of this act, and we believe no one will dispute that they are articles of food. This being true, why should this department stand for the operation of the cream separator in a hog house. Last week a would-be dairyman donated $25.00 to the school fund of Fayette County for that privilege; besides this he paid the costs of the case. One other offender paid $15 and costs, while two others in Clayton County contributed $10 each. We wish to give these prosecutions the publicity they merit as a warning to other willful offenders. The old saying that ''cleanliness is next to Godliness'' does not seem to appeal to some of the cream producers. If these people alone were the sufferers for such gross negligence, we should not feel so vitally interested. They do not appear to know or care how much loss or damage they are doing a careful neighbor with whose cream their filthy product is mixed in going to market, neither are they at all solicitous of the welfare of the buttermaker who is using every effort to make a grade of butter that will score 92, or better, so that the creamery may receive a price that shall reflect credit on the management as business men, and fairly compensate the real dairyman for his hard work.

We believe that the unwashed separator has had more to do with low grade butter than any other evil.

We are writing this as a warning to the filthy offenders and to say that unless they clean up and change their methods they will be obliged to do so after having donated to Iowa's school fund.

TRADE MARK FOR IOWA BUTTER.

This department has been co-operating with the Dairy Department of the Iowa State College at Ames working out plans for a trademark brand for Iowa butter. Mr. M. Mortensen, professor in dairying at Ames, spent four months this summer in Denmark and Holland and brings home with him much valuable data.

We have requested E. R. Harlan, curator of the state historical department, to draft an appropriate design for the Iowa trade mark. It was at first suggested that the state coat of arms be placed on the design, but this suggestion was dropped.

We have recommended that the Iowa State Dairy Association appoint a committee to work with the State Dairy and Food Commission and representatives of the Iowa State College in formulating laws to be enacted by the next general assembly. A reasonable amount of financial aid or help will be asked of the legislature to put this brand of butter before the people of this and other countries.

The idea, as put before the buttermakers, is that the state adopt a trademark which may be used by all persons who comply with a certain standard to be fixed by the state for Iowa butter. The butter must score at least 93 per cent on the system of scoring adopted by the state. This system included inspection of the plants, the material used, and the butter products. At any time a plant falls below the standard, the state would withdraw the privilege of putting the product out as Iowa butter.

The state produces for sale outside of Iowa nearly 90,000,000 pounds of butter annually. The grade is high, but by the establishment of a standard, we think it can be improved so that outside of the state there will be a steady demand for Iowa butter at prices 2c to 3c above the market.

Regarding the scoring, we would further recommend that butter from the creameries having the privilege of using this trademark be scored monthly and that such scoring be done at the **Iowa** experiment station and that for doing such scoring one man be furnished by the State Dairy and Food Commissioner, one by the Dairy Department, Iowa State College, and third to be a creamery buttermaker from one of the creameries belonging to the association. The reports from such scorings should be mailed immediately to the office of the State Dairy and Food Commissioner, who should have the authority to call for a return of the trademark whenever it is found that the quality of the butter does not warrant the use thereof.

Any creamery desiring the privilege of using such a trademark should apply in writing to the office of the state dairy and food commissioner in Des Moines.

Any creamery allowed to use the trademark should also be allowed to use it on print butter. The manufacturers of parchment paper for such prints should receive a stamp from the state commissioner and no one would be allowed to use such a stamp except by instruction of the state dairy and food commissioner.

CONDITION OF BUTTER MARKET.

For the past twelve months the butter market has averaged somewhat lower than for the preceding year. Late in the year 1913, large shipments of foreign butter began to arrive which, taken in connection with rather a large amount of storage butter held in freezers, had a depressing effect on trade conditions. The demand for strictly fancy butter remained quite keen throughout the year, undergrades suffering because of the foreign competition. Very little of the butter received from New Zealand, Australia, Argentine or Siberia, has been good enough to compete with the best American butter. This condition has caused a wide range of prices between the grades offered and on December 15, 1913, the best butter was quoted on the New York market at 37c while seconds would not sell for more than 27c.

Creameries receiving poor raw material have found it difficult to operate at a profit owing to the low price received for poor grades of butter. This has resulted in an extraordinary effort being put forth to obtain a better grade of raw material and the outside competition, which appeared at first as a calamity, will result in an improved quality. Figures received from 506 creameries reporting indicate that the average quality of butter has again shown improvement over the preceding year.

The creameries of Iowa manufactured 92,865,921 pounds of butter which sold for $29,513,902.27, an average of 31.78c per pound. For the year preceding, the butter sold for 1.51c more than the average price quoted for extras, while for this year the butter brought 1.81c above the average quotation. This would indicate that the butter, selling on the same basis, was .3c per pound better value than in 1913. This increase seems small but when applied to the entire output amounts to $278,597 which, after all, is a mighty good return for the money and effort expended in securing the better quality.

The amount of butter produced is somewhat smaller than that reported a year ago and in our opinion the shrinkage is in a large measure due to the extremely dry weather which prevailed in the southern half of the state during the summer months. The general prosperity has also tended to decrease the number of cows milked on each farm but figures are not available which would indicate to what extent this has reduced the output of butter.

SHOWING AVERAGE MONTHLY PRICE OF EXTRA CREAMERY BUTTER IN NEW YORK MARKET.

Month	Twelve months ending Oct. 1 1903	Twelve months ending Oct. 1 1904	Twelve months ending Oct. 1 1905	Twelve months ending Oct. 1 1906	Twelve months ending Oct. 1 1907	Twelve months ending Oct. 1 1908	Twelve months ending Oct. 1 1909	Twelve months ending Oct. 1 1910	Twelve months ending Oct. 1 1911	Twelve months ending Oct. 1 1912	Twelve months ending Oct. 1 1913	Twelve months ending Oct. 1 1914
October	$.2362	$.2100	$.2095	$.2184	$.2611	$.2915	$.2673	$.3064	$.2996	$.3044	$.3129	$.3146
November	.2650	.2317	.2481	.2350	.2762	.2725	.2957	.3095	.3117	.3391	.3446	.3385
December	.2920	.2423	.2688	.2480	.3164	.2887	.3131	.3490	.2966	.3679	.3727	.3612
January	.2762	.2270	.2910	.2650	.3080	.3069	.3152	.3344	.2639	.3810	.3518	.3266
February	.2600	.2517	.3218	.2709	.3254	.3233	.3009	.2964	.2611	.3114	.3639	.2934
March	.2860	.2452	.2807	.2700	.3061	.2840	.2953	.3263	.2391	.3064	.3677	.2774
April	.2725	.2284	.3008	.2188	.3069	.2855	.2708	.3113	.2111	.3235	.3459	.2540
May	.2200	.2012	.2371	.2017	.2501	.2369	.2658	.2843	.2187	.3043	.2861	.2616
June	.2160	.1803	.2049	.2022	.2360	.2329	.2581	.2792	.2499	.2731	.2781	.2722
July	.2012	.1767	.2056	.2062	.2481	.2243	.2623	.2831	.2510	.2713	.2702	.2790
August	.1940	.1793	.2111	.2257	.2488	.2285	.2719	.2938	.2631	.2663	.2798	.3043
September	.2075	.1947	.2068	.2462	.2781	.2388	.3013	.2989	.2655	.2976	.3157	.3143
Av. value per lb. per year	$.2438	$.2140	$.2489	$.2340	$.2759	$.2762	$.2848	$.3060	$.2609	$.3121	$.3241	$.2997

REPORT OF THE IOWA STATE DAIRY ASSOCIATION.

The work of the Educational Department of the Iowa State Dairy Association during the past year has been conducted somewhat differently than in previous years, due to the development of dairying throughout the State. The special campaigns of previous years which covered large areas in a limited time served their purpose to stimulate interest and created a demand for more detailed information along the lines of better dairying. In order to meet this demand the department arranged to hold longer meetings and wherever possible conduct practical demonstrations by using the equipment and stock from the farms of each community.

The special work was also conducted as nearly as possible in those sections where dairying is least developed and where its introduction will be of greatest benefit in improving the agricultural conditions. The southern half of Iowa is in need of more dairying because of the condition of the soil and the relatively low income obtained with the present methods of farming used on the high priced land. There are but few creameries in this portion of the state and therefore the market for the dairy products is not as well developed as in the northern portions. In order to be of the greatest assistance a large part of the work has been devoted to the southern half of the State.

Since our last report representatives of the Iowa State Dairy Association have met 268 audiences in 62 counties. The records of the attendance at these various meetings show that 37,480 people have been reached. Of the 268 audiences, 43 were in attendance at the Farmers' Institutes, 89 at Creamery Meetings, and the remaining 136 meetings were conducted by the Dairy Association directly.

Up to the winter of 1913-14 the department had operated 12 dairy trains. These covered every railroad line in the State and furnished the lecturers an opportunity to reach 595 towns, 47 of which were given two meetings due to the crossing of the various lines. These special trains were conducted in a manner to create an interest in dairying and prepared the way for more detailed information in the localities visited.

During the winter of 1914, a special dairy train was operated over the Chicago, Burlington & Quincy Railroad. Meetings from one half day to a full day in length were held at each town and a complete program given. Although the train was out nearly a month, the longer meetings would only permit holding from three to four a day. This limited the number of meetings and only the communities that were willing to give assistance were included in the itinerary. The farmers, the business men, and the commercial clubs at each place cooperated in every way to make the meeting a success.

Upon the arrival of the train, lectures were given in a hall provided by the town for this purpose. The subjects of feeding, breeding, care of the herd, the pure bred sire, barn construction, silos and ensilage, alfalfa, the care of cream, diseases of dairy cattle, etc. were taken up in a practical manner. After each lecture questions were called for and discussions held.

The exhibit cars carried on this special were equipped more completely than those on the previous trains. The exhibit of dairy appliances, model silos, barns, etc., as well as representatives of the leading breeds were shown to the audiences after the program at the hall and the local cow show had been completed.

A community cow show was held in conjunction with 58 of the meetings conducted during the year. This feature in every instance proved most practical and instructive. At each town the business men provided prizes for the best cows exhibited. This created considerable rivalry and brought out an average of 18 cows at each show.

In addition to the farmers' meetings an effort was made to reach the younger generation. In order to do this most efficiently, lectures on general dairying were delivered to the high school students. At the completion of the lectures the boys and girls were given work in judging dairy cattle. Prizes for this contest were also offered by the local merchants. According to the records 1685 boys and girls were given instructions in judging dairy cattle.

A milk record contest among the boys and girls between the ages of 12 and 20 years was also conducted during the year. One hundred and eighty-two contestants were entered, and one hundred fifty-seven completed the work. Each of the contestants kept records on the milk and butterfat produced, the cost of feed, and figured the profit or loss on three or more cows for three months. The results of the contest indicate that 623 cows were under test. Practically all of them were located on farms which would not have carried on this work had it not been for the contest. As an inducement to encourage the boys and girls to enter this contest, three pure bred bull calves, representing the Holstein, Jersey and Guernsey breeds were given for the first three prizes. Other prizes in the form of dairy equipment, cash prizes and farm journals were offered by companies interested in the promotion of dairying.

A number of creameries were assisted in issuing to their patrons bulletins containing dairy information. The department made a study of the conditions of the various localities and furnished the copy for these bulletins.

The practice of issuing bulletins which began last year was continued throughout the present year. During the busy season for the farmers when it was impossible to hold meetings, bulletins on timely topics, pertaining to the improvement of the dairy conditions on the average farm were prepared and sent for publication to the newspapers in 364 communities.

In addition to the above mentioned work the Association has assisted the managements of the County and District fairs to increase their dairy departments. Production contests were also conducted at a number of the local fairs. The organization of breeding and testing associations has also been encouraged in a number of localities.

Like in former years the state dairy expert helped with the management of the Dairy Cattle Congress which is held annually with the State Dairy Association Convention. The Dairy Show since its beginning in 1910 has been an important factor in encouraging better dairying . It brings the best representatives of all the leading breeds of dairy cattle in America to Iowa for the inspection of the farmers and dairymen. In addition to the cattle there is a large exhibit of butter and other dairy products as well as up-to-date dairy farm equipment of all kinds. The convention proper is held on the grounds of the show and furnishes an added attraction to those seeking dairy information.

The Iowa State Dairy Association in all of its work has been assisted in a large measure by the other dairy interests of the State. Chief among these is the Dairy and Food Department which had a number of speakers on the trains throughout the tours and also co-operated in all the other work. The individual dairymen have also sacrificed portions of their time to educating their brother farmers in better methods and giving them the benefit of valuable experience. The Dairy Department of the Iowa State College and the Department of the State Veterinarian has also given valuable assistance each year.

There is an extensive field for dairy educational work in Iowa. The preliminary work of showing the vital relation of good dairying to permanent agriculture is being rapidly accomplished. If the necessary funds are supplied the work can be extended and dairying made to be a very profitable department on the Iowa farm.

ALFALFA.

The acreage devoted to alfalfa, especially in dairy districts, is rapidly increasing in Iowa from year to year. The men who contend that alfalfa cannot be grown on Iowa land are harder to find than they were a few years ago, and when farmers over our state know as much about raising alfalfa as they do about raising our great corn crop, its success will be assured. It is not an uncommon thing for alfalfa to yield five tons to the acre in three cuttings and being nearly equal in nutritive food value to wheat bran, it is not unfair to say that good alfalfa hay is worth from $10.00 to $15.00 per ton to any feeder of farm animals.

When starting an alfalfa field select a well drained tract with a water level at least five feet from the surface. Alfalfa will not grow on a water-logged, mucky or sour soil. To determine the sourness or acidity of the soil, use the blue litmus paper test. Procure some blue litmus paper from your druggist, cut a slit in the moist soil and insert the paper and press the soil closely around it. Allow it to remain about a half hour and then examine the color of the paper. If the paper is pink the soil shows acidity and should be limed before sowing alfalfa, but if it remains blue no lime is necessary.

Alfalfa may be sown in either the fall or spring, but fall sowing is to be advised as a grain crop can be raised on the land during the early months of the season and if sown in the spring the field is apt to become infested with weeds. The plant does not, as a rule, do well with a nurse crop.

The field to be used should be well fertilized with well rotted barnyard manure, and inoculated with nitrogen gathering bacteria which are so essential to the life of the alfalfa plant. Soil may be inoculated in two ways; First, by taking wagon loads of dirt from a neighboring alfalfa field, or sweet clover field, (which uses the same kind of bacteria) or the pure culture. These nitrogen producing bacteria are seldom found in soil never before used for alfalfa. Plow the soil deep, providing as much aeration as possible before planting the seed.

Sow about twenty pounds to the acre of the best alfalfa seed procurable to obtain the best results. The time to cut the crop is when the little shoots put out at the base of the plant. Never harvest the crop until these appear.

Good alfalfa hay used in conjunction with corn silage and a small grain ration is the ideal balanced ration feed for a dairy cow without the addition of any high priced concentrate to reduce the profit from the butterfat. When the dairymen of the state are universally equipped with silage and alfalfa their profits will be very materially increased.

THE BABCOCK TEST IN THE PUBLIC SCHOOLS.

Ever since the Babcock test has been generally used as a means of determining the amount of butterfat produced by individual cows, dairy authorities have recognized the value of placing these machines in the hands of dairymen. Farmers and dairymen have been urged to weigh the milk from each cow and test the product on the farm as this part of the dairy work always creates an interest in better dairy animals and adds an attractive feature to the otherwise monotonous labors of the dairyman.

Realizing the importance of reaching the young people on the farm, the operation of the Babcock test has been demonstrated to large numbers of pupils in the schools throughout the state and the interest shown in this subject leads us to believe that within a short time the subject of testing milk and cream.will be taught as a part of a regular course in agriculture in the rural schools.

The Owasa public school has during the past year carried on a course of instruction in testing milk and cream and prizes were offered to those who stood highest in an examination given at the close of the school year in June, 1914. In giving the examination the same blanks were used as have been adopted in examining operators of the Babcock test before issuing licenses in this state and the papers filled out by these pupils were very creditable and indicated that the instruction had been thorough. In addition, these pupils were given instruction in the care of milk and cream and bulletins issued by this department were used as a text in school work. Essays written by the various pupils, which were later submitted to this department, for grading, indicate that the pupils gained a very clear idea of the subject matter and we believe this plan furnishes the best means of improving the quality of Iowa butter. Keeping in mind that many of these boys and girls will within a few years be the people who will live on the farms of Iowa, we cannot over-estimate the importance of teaching them proper methods in the care of milk and cream.

Much of the poor cream produced is a result of failure on the part of our dairymen to understand the necessity for giving the best care to their produce and no work undertaken in recent years will bring greater direct benefit to the individuals and to the state as a whole than this line of instruction in the rural schools of the state.

CREAMERY SCORE CARD.

Early in the year 1913, Prof. M. Mortenson of the Dairy Department at Ames offered prizes for the best kept creamery premises with a view to creating an interest in better creamery buildings and surroundings. The contest aroused considerable rivalry and the results were such as justified an expansion of his idea.

At the semi-annual meeting of inspectors of this department in May, 1914, Prof. Mortensen appeared and presented his plan with the result that a committee of our inspectors met with Prof. Mortensen and a creamery score card was designed to be used in grading the various creameries according to the condition of the plant and equipment. Prof. Mortensen again provided prizes for the highest scoring plant and our creamery inspectors are able to fill out a score card of the building and grounds while making the regular sanitary inspection of the plant and at the end of the year the score cards will be judged by a committee to determine the winner of the prizes.

It has long been acknowledged that a clean building with well kept grounds had a good effect on the producer of the raw material and a creamery plant in which the producers take pride acts as a stimulant to produce a superior quality of milk or cream. There are many creameries throughout the state that will pass inspection under the law and yet may be greatly improved by a little additional care on the part of the buttermaker or Board of Directors. Little attention has been paid to the beautification of the grounds surrounding our industrial establishments but we hope in the future to so educate the farming communities that they will make their creamery grounds a place of beauty as well as a financial asset to the community.

FOOT AND MOUTH DISEASE.

Foot and mouth disease is an acute, highly communicable disease confined to cloven-footed animals and ruminants and is characterized by an eruption of vesicles on the mucous membrane of the mouth and on the skin between the toes and above the hoofs and sometimes on udder, teats and escutcheon. The vesicles rupture, forming erosions and ulcerations; there is also salivation, tenderness of the affected parts, loss of appetite, lameness, emaciation, and diminution in the quantity of milk secreted. In some instances, the horn tissues slip from the foot of the hog. The foot lesions are most pronounced in hogs, the mouth lesions in cattle.

The tremendous ravages of the disease are seen in the number and variety of the species attacked. While it may be regarded as essentially a disease of cattle, hogs are fully as susceptible. Sheep and goats are apparently not as susceptible as cattle and hogs. Horses, dogs, cats and even poultry, may occasionally carry the infection. Man himself is not immune, and the frequency of his infection by coming in contact with diseased animals is established by numerous observations.

The disease prevails in European countries and occasions great economic losses. The disease has made its appearance in the United States only on five different occasions—1870, 1880, 1884, 1902-3, and 1908, but fortunately every outbreak upon American soil has thus far been quickly followed by its complete eradication. The United States through the Bureau of Animal Industry, working in co-operation with the authorities of various states, has never failed to eradicate this disease. This cannot be said of any other country in connection with the outbreaks of foot and mouth disease.

The causative agent or germ of this disease has not been isolated or identified. The specific principle may be found in the serum of the vesicles in the mouth and on the feet and udder; in the saliva, milk and various secretions and excretions; also in the blood during the rise of the temperature. Animals may be infected directly through the saliva, as by licking each other, and in calves by sucking diseased cows, or indirectly by fomites such as infected manure, hay, utensils, drinking troughs, railway cars, animal markets, barnyards, and pastures.

Foot and mouth disease is primarily and principally a disease of cattle, sheep, goats and swine. The disease may be transmitted to man, and especially to children, through the ingestion of raw milk from a diseased cow. It is doubtful whether the disease can be transmitted to man by cutaneous or subcutaneous inoculation, though it is probable the infection may be communicated if the virus directly enters the blood through wounds of any kind. Children are not infrequently infected by drinking raw milk during the periods in which the disease is prevalent in the neighborhood, while persons in charge of diseased animals may become infected through contact with the diseased parts or by milking, slaughtering, or caring for the animals.

The disease is very seldom fatal to human beings, usually appearing in a very mild form except in weakened children, in whom an accompanying intestinal catarrh may lead to a fatal termination.

An animal in the first stages of the disease, or with a slight attack, will produce milk which is only slightly abnormal. There is generally a reduction in the quantity of sugar and casein, which causes a reduction in the specific gravity. When the disease is fully developed, the milk invariably contains inflammatory products of a very pronounced character and the quantity of milk is greatly reduced. Cows affected with malignant form of the disease practically fail to produce milk.

If the udder becomes involved the milk becomes slimy and is yellowish and viscous like colostrum. It may contain blood and deposit a sediment on standing; the cream layer is thin and of a dirty color. Sometimes no cream layer is formed, the milk appearing uniform but slimy and possessing a bad odor and repulsive rancid taste.

On account of the possibility of the disease being transmitted to human beings as well as to animals, through the use of milk and its products, it is advisable that all milk, cream, skim milk, and buttermilk be efficiently pasteurized. The bacteria causing the disease loses its virulence by being heated to 122° F. for 15 minutes; by being heated to 158° F. for 10 minutes; heating to boiling destroys it at once. The bacteria is not easily killed by cold and has been known to remain active after being placed in a refrigerator for one month.

As a means of safeguarding the health of the people through the milk supply of the state, as well as for the protection of the dairyman and his herd, the Commission makes the following recommendations:

ALL FARMS FOUND TO HAVE DISEASED ANIMALS MUST BE IMMEDIATELY QUARANTINED AND NO MILK OR DAIRY PRODUCTS THEREFROM PERMITTED TO BE USED FOR ANY PURPOSE WHATSOEVER.

CREAMERIES MUST THOROUGHLY PASTEURIZE ALL CREAM, MILK, SKIM MILK, AND BUTTER-MILK.

WASH AND SCALD ALL MILK CANS AS SOON AS THEY ARE RETURNED.

DO NOT VISIT FARMS OR DISTRICTS WHERE THE DISEASE IS PREVALENT OR SUSPECTED.

DO NOT PURCHASE FEED OR BEDDING FROM INFECTED DISTRICTS.

ALL BUILDINGS AND EQUIPMENT SHOULD BE KEPT IN A CLEAN AND SANITARY CONDITION.

THOROUGHLY CLEANSE ALL WATERING TROUGHS FREQUENTLY.

DO NOT PERMIT VISITORS OTHER THAN OFFICERS OR VETERINARIANS TO INSPECT YOUR ANIMALS.

KEEP ALL LIVE STOCK OFF THE HIGHWAYS.

ALL DOGS AND CATS SHOULD BE CONFINED AT HOME, ALSO PIGEONS. ALL STRAY DOGS, CATS, PIGEONS AND CROWS SHOULD BE SHOT.

The following disinfectants are satisfactory when thoroughly applied to cow barns and premises.

Three per cent solution cresol compound U. S. P. or 5% solution of carbolic acid, with sufficient lime to whiten the solution.

If the disease is prevalent in your vicinity, spray barns thoroughly with either of the above solutions. The water should be luke warm. Strain the solution before placing in sprayer. Spray the barn soon after the cows are turned out in the morning.

Animals' feet may be disinfected with a 1 to 1,000 solution of Bichloride of Mercury.

COMPETITIVE EXHIBITIONS OF MILK.

In this state four such annual exhibitions have been held, under the auspicies of the State Dairy Association, and in connection with the Dairy Cattle Congress at Waterloo, during the month of October. As no tabulated reports of these contests have been published we deem them worthy of a place in this report, since the first three were under the direct supervision of O. P. Thompson, State Dairy Inspector of this department.

"The first public milk and cream exhibition for prizes in this country was held in connection with the National Dairy Show in

Chicago, under the direction of the Dairy Division, Bureau of Animal Industry, United States Department of Agriculture, February 15-24, 1906. The objects were, first, educational; second, to determine the possibilities in the handling and keeping of milk and cream produced under sanitary conditions and kept cold; and third, to test a score card for rating fairly and accurately this class of dairy products.''

It was deemed advisable to have but one class—raw milk at this time, and to add at a later date pasteurized milk, and also a class for cream both raw and pasteurized.

Some objection has been made to this sort of an exhibit from the fact that the samples submitted do not accurately represent the milk offered for sale in a regular way, and that the milk men take extra pains with this milk. This is ordinarily the case, but this is an educational exhibit and is intended to show what can be done.

The buttermaker who enters a tub of butter for the scoring contest does not take this butter from his regular churning, neither does the exhibitor of dairy cattle, for a prize, lead his cow directly from the pasture into the show ring. To those unfamiliar with these exhibitions, it may seem that the score under the head of ''Visible dirt'' is low, but it averages up well with other similar exhibits, at other shows. The samples for the first three years were judged and plated for bacterial count on the fourth day after being milked, and those for the current year were judged and plated on the second day.

Table showing the number of milk licenses issued to city milk dealers for each year from 1907 to 1914. In each case the year ends on July Fourth.

	1907	1908	1909	1910	1911	1912	1913	1914
Number..	1006	1078	1149	1106	1310	1908	2038	2189

Cities	Population	Inspectors
Boone	10,347	M. Healy, M. D.
Burlington	25,741	W. F. Schroeder
Cedar Rapids	32,811	Phil Pray
Clinton	25,577	J. H. Spence, D. V. S.
Council Bluffs	29,292	Peter Smith
Davenport	43,028	H. J. High
Des Moines	86,368	H. W. McElroy
Dubuque	38,494	F. J. Kennedy, D. V. S.
Fort Dodge	15,543	Francis Ludgate, M. D.
Keokuk	14,008	W. P. Sherlock, M. D.
Iowa City	10,091	C. S. Chase, M. D.
Marshalltown	14,000	C. A. Noggle, D. V. S.
Mason City	11,230	A. L. Wheeler, M. D.
Muscatine	16,178	John Tillie, D. V. S.
Ottumwa	22,012	B. W. Van Der Veer
Sioux City	47,848	E. C. Pape
Waterloo	26,693	W. W. Wyant

TABLE NO. 3.

Table Showing Number of Pounds of Milk Received, Number of Pounds of Cream Received, Pounds of Butter Made and Pounds Sold in Iowa and Outside the State so far as Reported by the Creameries.

Counties	Number reporting	Pounds of milk received	Pounds of cream received	Pounds of butter manufactured	Pounds sold to patrons	Pounds sold in Iowa	Pounds sold outside the state
Adair	2	137,473	1,568,831	602,824	38,566	35,460	528,798
Adams	1	------------	325,238	132,502	5,171	13,356	113,975
Allamakee	8	------------	7,112,711	1,937,855	40,123	117,328	1,780,404
Appanoose	----	------------	------------	------------	----------	------------	----------
Audubon	8	47,554	2,968,538	1,098,945	61,932	40,179	996,834
Benton	6	9,000	1,440,543	501,347	17,436	106,974	376,937
Black Hawk	14	24,978,862	4,593,080	2,437,168	149,111	660,118	1,627,939
Boone	2	------------	845,895	285,615	11,536	140,200	133,879
Bremer	25	69,338,236	1,279,312	3,040,178	268,131	163,498	2,608,549
Buchanan	8	15,856,332	2,196,738	1,348,437	100,814	165,050	1,082,573
Buena Vista	6	44,269	3,251,591	1,086,915	47,266	72,684	966,965
Butler	15	8,085,976	3,893,743	1,515,082	125,836	96,181	1,293,065
Calhoun	5	11,716	2,519,292	830,825	23,433	30,960	776,432
Carroll	10	185,210	2,270,248	821,370	21,948	134,312	665,110
Cass	2	------------	1,570,193	534,755	1,535	111,507	421,713
Cedar	4	181,496	1,483,660	490,334	18,889	210,148	261,297
Cerro Gordo	9	1,357,817	2,841,683	1,518,772	43,117	223,091	1,252,564
Cherokee	2	------------	297,783	110,824	28,562	26,000	56,262
Chickasaw	11	19,122,372	5,870,040	2,514,710	177,966	108,232	2,228,512
Clarke	----	------------	------------	------------	----------	------------	----------
Clay	8	318,212	2,162,466	812,274	51,665	82,064	678,545
Clayton	14	15,562,554	7,464,985	3,185,670	101,934	313,987	2,769,749
Clinton	6	233,998	3,374,026	1,124,941	20,792	159,890	944,259
Crawford	1	------------	372,804	124,268	676	24,639	98,953
Dallas	3	4,868,000	3,908,817	323,223	18,435	204,192	100,596
Davis	1	------------	168,000	60,480	1,350	29,165	29,965
Decatur	1	------------	1,394,050	418,057	----------	13,414	404,643
Delaware	16	17,170,094	7,108,457	3,109,066	197,133	264,081	2,647,852
Des Moines	6	36,777	2,670,475	941,341	19,642	58,752	862,947
Dickinson	----	------------	------------	------------	----------	------------	----------
Dubuque	17	2,020,386	6,392,830	2,184,904	85,718	311,681	1,787,505
Emmet	5	1,251,473	931,636	470,535	38,752	9,345	422,438
Fayette	21	36,035,392	7,276,695	3,739,045	267,533	280,952	3,190,560
Floyd	4	43,000	4,062,832	756,308	31,418	199,123	525,767
Franklin	7	28,869	3,941,583	1,178,443	53,569	71,391	1,053,483
Fremont	1	------------	120,345	40,115	----------	11,372	28,743
Greene	2	174,705	325,325	126,633	11,233	39,701	75,699
Grundy	5	954,139	2,495,244	806,779	47,515	8,968	750,296
Guthrie	5	66,875	1,998,290	672,625	49,958	76,609	546,058
Hamilton	5	1,556,221	1,179,867	356,782	43,086	44,901	268,795
Hancock	8	------------	4,577,898	1,448,172	63,403	56,934	1,327,835
Hardin	10	540,239	4,896,631	1,605,359	94,976	132,872	1,377,511
Harrison	1	------------	300,000	100,000	20,000	80,000	----------
Henry	----	------------	------------	------------	----------	------------	----------
Howard	9	1,700,315	5,700,230	1,680,967	91,832	150,205	1,438,930
Humboldt	6	------------	2,567,261	839,006	31,630	61,032	746,344
Ida	1	26,000	651,670	255,500	4,000	35,000	216,500
Iowa	7	------------	1,364,752	508,393	46,029	50,395	411,969
Jackson	12	744,126	4,688,179	1,576,052	34,333	97,561	1,444,158
Jasper	3	467,747	444,035	159,171	11,287	47,923	99,961
Jefferson	1	------------	265,450	86,250	----------	56,250	30,000
Johnson	1	10,000	36,000	12,000	2,000	10,000	----------
Jones	7	1,516,361	6,699,111	2,037,059	101,075	117,743	1,818,241

TABLE NO. 3—Continued.

Counties	Number reporting	Pounds of milk received	Pounds of Cream received	Pounds of butter manufactured	Pounds sold to patrons	Pounds sold in Iowa	Pounds sold outside the state
Keokuk	2	----------	485,000	164,800	2,000	62,800	100,000
Kossuth	18	1,629,217	5,819,890	1,883,792	157,119	128,878	1,597,795
Lee	1	23,416	4,439,260	1,146,420	----------	130,970	1,015,450
Linn	10	1,197,479	7,125,267	2,289,292	68,841	402,622	1,817,829
Louisa	1	----------	52,734	13,711	160	2,943	10,608
Lucas	----	----------	----------	----------	----------	----------	----------
Lyon	3	----------	1,403,134	481,627	2,652	15,885	463,090
Madison	----	----------	----------	----------	----------	----------	----------
Mahaska	1	----------	497,679	165,803	----------	----------	165,893
Marion	1	115,824	282,432	102,826	----------	10,720	92,106
Marshall	4	82,516	1,940,690	687,414	21,874	213,165	452,375
Mills	1	58,888	210,525	70,175	----------	40,672	29,503
Mitchell	7	713,160	4,246,691	1,253,316	85,776	66,309	1,101,231
Monona	2	----------	172,255	45,085	6,667	9,152	29,266
Monroe	1	----------	320,000	90,000	2,000	50,000	38,000
Montgomery	----	----------	----------	----------	----------	----------	----------
Muscatine	----	----------	----------	----------	----------	----------	----------
O'Brien	5	183,813	1,772,165	663,840	34,774	95,878	533,188
Osceola	3	----------	567,076	232,176	5,460	31,359	195,357
Page	1	----------	1,999,115	858,083	----------	57,785	800,298
Palo Alto	12	3,685,001	4,410,898	1,517,533	155,762	102,006	1,259,765
Plymouth	3	234,387	771,551	265,077	8,204	87,808	169,065
Pocahontas	5	5,000	1,079,968	351,610	7,209	40,165	304,236
Polk	3	520,000	10,953,073	3,729,311	----------	1,590,321	2,138,990
Pottawattamie	1	----------	2,868,656	954,552	----------	207,100	747,452
Poweshiek	3	83,105	684,356	232,204	4,294	123,279	104,631
Ringgold	1	3,467	25,110	8,859	110	1,945	6,804
Sac	6	57,422	1,674,026	569,546	25,962	83,046	460,538
Scott	3	5,836	764,285	250,992	----------	56,016	194,976
Shelby	6	----------	993,228	379,567	20,071	22,172	337,324
Sioux	9	191,887	4,245,318	1,540,089	36,410	92,709	1,410,970
Story	8	104,220	2,356,420	792,138	86,375	141,997	563,766
Tama	5	22,974	1,029,300	341,487	12,379	87,250	241,858
Taylor	2	----------	2,310,328	766,705	15,620	46,320	704,765
Union	2	103,604	757,202	275,586	5,383	44,829	225,374
Van Buren	----	----------	----------	----------	----------	----------	----------
Wapello	3	----------	4,468,804	1,423,827	----------	381,354	1,042,473
Warren	----	----------	----------	----------	----------	----------	----------
Washington	2	787,500	64,968	20,656	----------	----------	20,656
Wayne	2	----------	1,820,457	663,169	3,245	66,723	593,201
Webster	3	431,151	1,427,826	424,922	2,973	212,498	209,451
Winnebago	8	4,212,328	4,712,220	1,640,114	129,366	72,388	1,438,360
Winneshiek	10	----------	8,240,797	2,367,506	35,855	108,043	2,223,608
Woodbury	3	1,141,103	27,452,206	10,740,082	10,000	723,836	10,006,246
Worth	9	20,910	4,300,153	1,306,374	72,086	55,975	1,178,313
Wright	5	51,149	2,047,787	607,689	27,505	114,909	465,275
Total	506	240,347,153	256,661,863	92,865,921	3,768,478	11,337,247	77,760,196

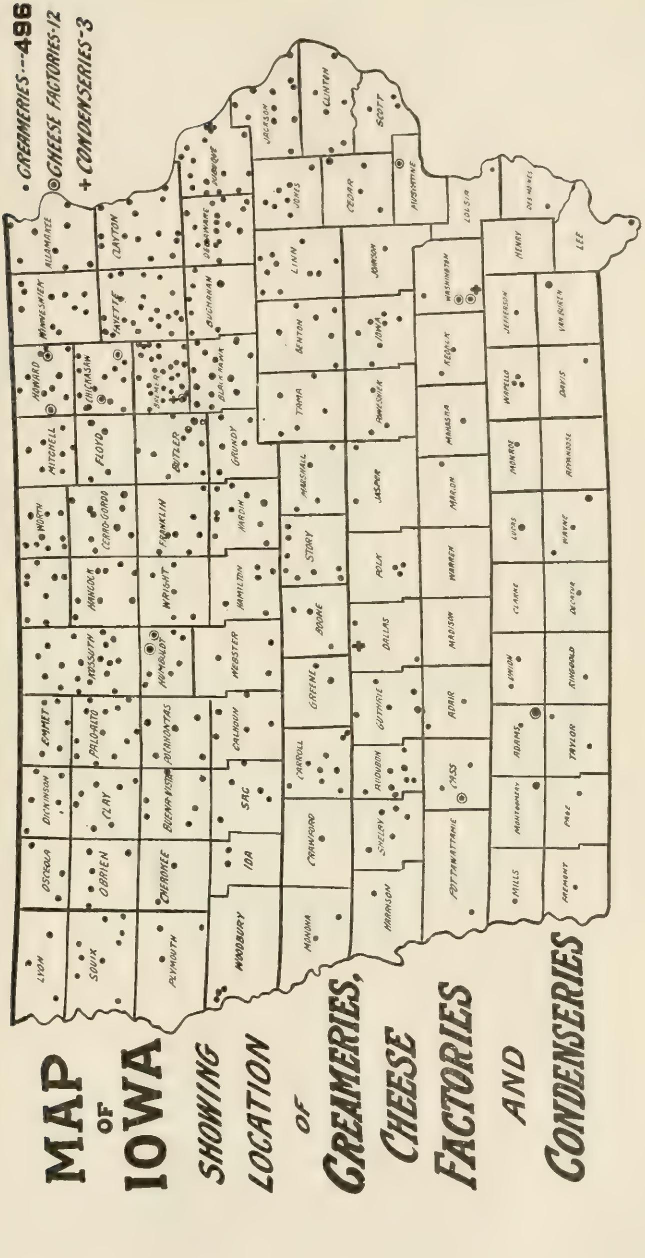
TABLE NO. 4.

Table Showing Number of Hand Separators, Number of Patrons and Number of Cows.

Counties	Received cream by rail	No. of creameries reporting hand separators	Hand separators reported	No. of patrons reported	No. of cows reported
Adair	--------	2	713	717	4,038
Adams	--------	1	144	160	1,120
Allamakee	--------	8	1,648	1,735	13,603
Appanoose	--------	--------	--------	--------	--------
Audubon	--------	8	1,086	1,226	8,881
Benton	--------	6	1,196	778	4,401
Black Hawk	2	12	1,259	2,049	13,519
Boone	--------	2	360	360	2,660
Bremer	--------	7	248	1,984	16,926
Buchanan	1	7	837	1,353	9,394
Buena Vista	--------	6	1,354	1,367	9,268
Butler	--------	14	934	1,535	10,980
Calhoun	2	5	837	1,020	5,895
Carroll	--------	10	1,394	1,476	7,998
Cass	2	2	471	541	3,440
Cedar	--------	4	747	789	5,344
Cerro Gordo	2	8	943	1,463	9,975
Cherokee	--------	2	290	384	3,155
Chickasaw	--------	9	1,402	1,978	16,702
Clarke	--------	--------	--------	--------	--------
Clay	--------	9	1,125	1,014	6,226
Clayton	--------	13	2,172	2,665	21,176
Clinton	2	6	1,645	1,672	7,778
Crawford	1	1	120	124	868
Dallas	1	2	440	721	4,867
Davis	--------	1	80	129	612
Decatur	1	1	600	700	4,400
Delaware	1	15	1,857	2,543	16,677
Des Moines	1	6	1,043	1,060	6,730
Dickinson	--------	--------	--------	--------	--------
Dubuque	3	17	1,768	1,939	15,184
Emmet	--------	5	381	414	3,517
Fayette	--------	14	1,802	3,021	21,533
Floyd	--------	4	635	902	5,630
Franklin	1	7	1,105	1,200	8,394
Fremont	--------	1	60	65	455
Greene	--------	2	269	279	1,998
Grundy	--------	5	584	665	5,629
Guthrie	--------	5	780	810	5,446
Hamilton	--------	5	503	674	4,293
Hancock	--------	8	1,339	1,339	9,884
Hardin	1	10	1,467	1,584	10,427
Harrison	--------	1	130	150	1,050
Henry	--------	--------	--------	--------	--------
Howard	--------	9	1,499	1,603	13,952
Humboldt	1	6	903	938	6,485
Ida	--------	1	180	200	1,000
Iowa	--------	7	569	582	3,904
Jackson	1	12	1,490	1,561	11,089
Jasper	--------	2	232	244	1,639
Jefferson	--------	1	75	120	850
Johnson	--------	1	20	20	140
Jones	2	7	1,821	1,878	13,335
Keokuk	1	2	175	200	1,400
Kossuth	--------	18	1,629	1,639	12,481
Lee	1	1	400	4,000	21,000

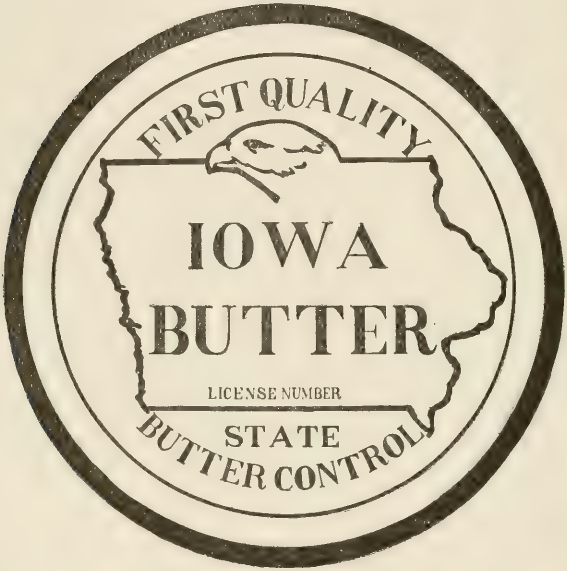
TABLE NO. 4—Continued.

Counties	Received cream by rail	No. of creameries reporting hand separators	Hand separators reported	No. of patrons reported	No. of cows reported
Linn	1	10	2,552	2,893	17,426
Louisa	--------	1	75	85	560
Lucas	--------	--------	--------	--------	--------
Lyon	1	3	585	667	4,844
Madison	--------	--------	--------	--------	--------
Mahaska	1	1	165	165	1,155
Marion	--------	1	161	327	1,120
Marshall	--------	4	807	908	4,941
Mills	--------	1	70	70	490
Mitchell	--------	7	1,034	1,473	9,485
Monona	--------	2	150	154	886
Monroe	--------	1	175	175	1,050
Montgomery	--------	--------	--------	--------	--------
Muscatine	--------	--------	--------	--------	--------
O'Brien	--------	5	846	870	5,329
Osceola	--------	3	254	291	2,029
Page	1	1	1,100	1,260	7,560
Palo Alto	--------	12	1,273	1,413	9,216
Plymouth	--------	3	420	424	2,814
Pocahontas	1	5	542	542	3,420
Polk	3	3	3,745	4,245	35,315
Pottawattamie	1	1	890	954	6,678
Poweshiek	1	3	457	682	4,720
Ringgold	--------	1	130	150	1,050
Sac	--------	6	895	935	6,295
Scott	2	3	277	297	2,366
Shelby	1	6	682	682	3,969
Sioux	--------	9	3,025	2,278	13,228
Story	--------	8	992	1,001	6,724
Tama	--------	5	416	426	2,662
Taylor	1	2	789	789	5,660
Union	1	2	330	351	1,951
Van Buren	--------	--------	--------	--------	--------
Wapello	3	3	1,206	1,422	9,954
Warren	--------	--------	--------	--------	--------
Washington	--------	1	30	30	210
Wayne	1	2	520	630	2,850
Webster	1	3	475	578	3,439
Winnebago	--------	8	1,307	1,447	9,547
Winneshiek	--------	10	2,040	2,279	15,204
Woodbury	3	3	2,694	10,134	70,938
Worth	--------	9	1,023	1,928	8,889
Wright	--------	5	856	2,794	6,242
Total	50	471	77,749	103,319	687,564


MAP OF IOWA
SHOWING LOCATION OF
CREAMERIES, CHEESE FACTORIES AND CONDENSERIES
• CREAMERIES - - 496
◎ CHEESE FACTORIES - 12
+ CONDENSERIES - 3
LYON
OSCEOLA
DICKINSON
EMMET
KOSSUTH
WORTH
MITCHELL
HOWARD
WINNESHIEK
ALLAMAKEE
SIOUX
O'BRIEN
CLAY
PALO ALTO
HANCOCK
CERRO-GORDO
FLOYD
CHICKASAW
FAYETTE
CLAYTON
PLYMOUTH
CHEROKEE
BUENA VISTA
POCAHONTAS
HUMBOLDT
WRIGHT
FRANKLIN
BUTLER
BREMER
BLACK HAWK
BUCHANAN
DELAWARE
DUBUQUE
WOODBURY
IDA
SAC
CALHOUN
WEBSTER
HAMILTON
HARDIN
GRUNDY
MONONA
CRAWFORD
CARROLL
GREENE
BOONE
STORY
MARSHALL
TAMA
BENTON
LINN
JONES
JACKSON
CLINTON
HARRISON
SHELBY
AUDUBON
GUTHRIE
DALLAS
POLK
JASPER
POWESHIEK
IOWA
JOHNSON
CEDAR
SCOTT
MUSCATINE
POTTAWATTAMIE
CASS
ADAIR
MADISON
WARREN
MARION
MAHASKA
KEOKUK
WASHINGTON
LOUISA
MILLS
MONTGOMERY
ADAMS
UNION
CLARKE
LUCAS
MONROE
WAPELLO
JEFFERSON
HENRY
DES MOINES
FREMONT
PAGE
TAYLOR
RINGGOLD
DECATUR
WAYNE
APPANOOSE
DAVIS
VAN BUREN
LEE

STATE TRADE MARK FOR BUTTER.

The Thirty-sixth General Assembly adopted a state trade mark for butter. This trade mark, its use and regulation is in charge of and under the control of an executive committee of five members consisting of the president of the Iowa State Dairy Association, president of the Iowa State Butter Makers' Association, the dean of the division of agriculture of the Iowa State College of Agriculture and Mechanical Arts, the professor of dairying of the same institution, and the dairy and food commssioner of the state of Iowa. Only butter which attains the standard fixed by the executive committee may use the trade mark. It is shown below:



PART VII

Report of the Thirty-eighth Annual Convention of the Iowa State Dairy Association

HELD AT

Waterloo, Iowa, Oct. 13 and 14, 1914, in connection with The Iowa Dairy Cattle Congress

The thirty-eighth annual convention of the Iowa State Dairy Association suffered along with the Iowa Dairy Cattle Congress, at the hands of the weather man. Almost every day prior to the opening of the Congress it rained, making the country roads impassable, and the first three days of the show it rained continuously. This caused thousands of farmers and others who would have attended to stay at home. On account of this weather, no sessions of the convention were held on Tuesday, and the attendance on Wednesday was not large enough to permit of the carrying out of much of a program.

President Quarton, of Algona, was not present, and J. J. Ross, of Iowa Falls, secretary of the association, occupied the chair.

The following report was made by Secretary Ross:

REPORT OF SECRETARY J. J. ROSS FOR THE YEAR 1914.

Mr. President, Members of the Iowa State Dairy Association, I'm sure that you will all agree with me that the weather man is not with us at this meeting and of course this accounts for there being so few members in attendance, but I will try and outline some of the work of your executive committee during the past year. There has been held four special meetings of the committee, one held at Ames on January 8, 1914, one on May 10, 1914, one on August 26, 1914, at Des Moines, and one on September 3, 1914, at Waterloo; the meeting held at Ames on January 8, was for the purpose of arranging for help with the dairy train in co-operation with the State Dairy Board and also for the purpose of qualifying the newly elected officers, and checking the books of the secretary and treasurer. The meeting held at Ames on May 10, was for the purpose of selecting a place to hold the 1914 convention. After reading the invitations from the different cities it was unanimously voted to accept the invitation of The Dairy Cattle Congress and go to

Waterloo and meet with them at the Dairy Cattle Show. The meeting held on August 26, was for the purpose of arranging a program for the convention, and meeting of September 3 was for the purpose of making final arrangements for the convention. Your executive committee has worked faithfully for the success of this meeting as have also the other kindred organizations, and we certainly are obligated to the Dairy and Food Department for the assistance which it has rendered us and also we feel grateful to the commission houses for the support they have given us by taking advertising space in the program and otherwise helping to make this meeting a success. The dairy press has contributed liberally to the success of this meeting and I do not think that I would be doing my entire duty if I did not mention the help and support which have been given us by the Kimball Dairy Farmer people. They have gladly given office room and have assisted in every way possible for the success of this meeting. They have even offered their entire force to the advancement of the work in connection with this meeting, but the most important support of all and the one which I wish to call your attention to, especially, is the loyal support of the buttermakers of Iowa, who have so liberally contributed to this meeting to the extent of one hundred and sixty-five tubs of butter. I want to say that this is the finest looking exhibition of butter that it has been my pleasure to see at any butter exhibition and the judges tell me that the quality is the finest we have ever had at a convention of our association and at this time I want to personally thank the buttermakers of Iowa for your hearty support. I want to assure you that your support is heartily appreciated. It is well understood that without your co-operation a convention would be far from a success and I hope that you will derive some benefit from this convention to partly compensate you for the contribution of your butter.

With regard to the work of the State Dairy Expert, Mr. E. S. Estel, will say the train which was operated over the Burlington railroad last winter was in every way an entire success. Large crowds visited the train and the management was well pleased with the results. Mr. Estel tells me that the calls for help at dairy meetings and creamery picnics together with the work among farmers' institutes and short courses are so numerous that he is unable to accommodate all of the calls and this in my opinion is sufficient evidence that the people of Iowa recognize that the appropriation given to the association is being well spent and should be encouraged by every member of this association. At this time I want to call your attention to the necessity of taking up this matter personally with your Senator and Representatives at the earliest opportunity, telling them that we want the appropriation continued for another biennial period. As the hour is late and there are a number of other speakers to follow me, I will now submit my report for your approval. I thank you.

THE ANNUAL REPORT OF THE IOWA STATE DAIRY ASSOCIATION TREASURER FOR THE PERIOD ENDING OCTOBER 1, 1914.

To The Members:

I have the pleasure of submitting herewith the annual report of the association, which is an accurate record of receipts and disbursements for the past year.

RECEIPTS.

Nov. 3, 1913	Great Atlantic & Pacific Tea Co., 3,300 lbs. butter at 33 1-16c	$1,091.06
Nov. 19, 1913	J. H. White & Co., convention program	5.00
Nov. 19, 1913	Great Atlantic & Pacific Tea Co., program	10.00
Nov. 19, 1913	State Buttermakers' Ass'n, one-half prize money	43.50
Nov. 19, 1913	J. G. Cherry Co., convention program	10.00
Nov. 19, 1913	Creamery Pkg. Mfg. Co., convention program	15.00
Nov. 19, 1913	Associated Mfg. Co., program	10.00
Nov. 19, 1913	Gallagher Bros., program	10.00
Nov. 19, 1913	International Harvester Co., program	15.00
Nov. 19, 1913	Pitt, Barnum & Co., program	5.00
Nov. 19, 1913	Indiana Silo Co., program	10.00
Nov. 19, 1913	Fitch, Cornell & Co., program	10.00
Nov. 19, 1913	Wells & Richardson Co., program	10.00
Nov. 19, 1913	Chas. Hilman, program	5.00
Nov. 19, 1913	Henneberger & Herold, program	10.00
Nov. 19, 1913	W. D. Collyer & Co., program	5.00
Nov. 19, 1913	Enyard & Godley, program	10.00
Nov. 19, 1913	Preservalin Mfg. Co., program	5.00
Nov. 19, 1913	J. J. Ross, tub of butter	9.10
Nov. 19, 1913	Interest	35.00
Nov. 19, 1913	Dairy Cattle Congress, officers' expense	20.50
Nov. 19, 1913	Memberships	200.00
Nov. 19, 1913	Dairy Cattle Congress, for 1913 convention	600.00
Jan. 16, 1914	Chr. Hansen's Laboratory, program adv	5.00
Jan. 16. 1914	J. B. Ford Co., program adv	10.00
Jan. 16, 1914	Geo. M. Baer & Co., program adv	10.00
Jan. 16, 1914	Prof. Mortensen, beauty contest	20.00
Jan. 16, 1914	Horton-Holden Co., program adv	5.00
Jan. 16, 1914	De Laval Separator Co., program adv	15.00
Jan. 16, 1914	Interest	36.00
Mar. 3, 1914	Payment on loan acct. No. 2	30.00
Aug. 1, 1914	Payment on loan acct. No. 2	100.00
Sept. 16, 1914	Gude Bros., Kieffer Co., 1914 program adv	10.00
Sept. 16, 1914	Lambly & Alpaugh, 1914 program adv	10.00
Sept. 16, 1914	Lesserman Bros., 1914 program adv	5.00
Sept. 16, 1914	Chr. Hansen's Laboratory, 1914 program adv	5.00
Sept. 16, 1914	Jacob Jacobsen, 1914 program adv	5.00
	On hand from last year	$1,542.95
	Total assets	$3,953.11

DISBURSEMENTS.

Sept. 29, 1913	Postmaster, stamps	$ 11.00
Oct. 2, 1913	Kimball's Dairy Farmer, 74 subs	18.50
Oct. 10, 1913	Corn Belt Telephone Co., long distance call	.55
Oct. 27, 1913	Reporting convention, and other expense	105.00
Oct. 22, 1913	E. S. Estel, September salary	25.00
Oct. 23, 1913	Colby-Parker Transfer Co.	.87
Oct. 23, 1913	U. S. Express Co., convention butter	11.51
Oct. 23, 1913	Wells, Fargo Express Co., convention butter	24.93
Oct. 25, 1913	Cressey & Wingate, decorating booth	7.50

Nov. 6, 1913—American Express Co., convention butter	21.08
Nov. 6, 1913—J. J. Ross, salary and expense to Nov. 1	275.45
Nov. 10, 1913—Crystal Ice & Fuel Co., convention ice	10.40
Nov. 13, 1913—A. F. Carlson, complimentary butter	6.36
Nov. 13, 1913—John Sadler, complimentary butter	6.36
Nov. 13, 1913—F. W. Dehn, complimentary butter	6.36
Nov. 13, 1913—John Schiller, complimentary butter	6.26
Nov. 15, 1913—Colby-Parker Transfer Co., drayage of butter	5.30
Nov. 20, 1913—Roland-McCurdy Adv. Co., six medals	86.00
Oct. 18, 1913—Prof. C. E. Lee, convention expense	20.00
Oct. 18, 1913—Prof. Larson, convention expense	20.50
Nov. 20, 1913—Erve A. Cole, expense scoring assistant	11.75
Nov. 20, 1913—Bradley's Dray Line, hauling butter to cars	8.00
Nov. 20, 1913—Creamery Pkg. Mfg. Co., butter triers	31.00
Nov. 20, 1913—Whitehead & Hoag Co., enameled emblems	80.80
Nov. 20, 1913—F. C. Barney, convention expense	10.52
Nov. 20, 1913—E. C. Lytton, convention expense	13.74
Nov. 20, 1913—H. D. Fairall, signs	3.00
Nov. 20, 1913—Waterloo Furniture Co., booth furniture rent	4.50
Nov. 20, 1913—Postmaster, stamped envelopes	1.00
Nov. 25, 1913—Kimball's Dairy Farmer, 36 subscriptions	9.00
Jan. 14, 1914—Mrs. Robt. Wagner, complimentary convention butter	6.36
Dec. 4, 1913—Stroebel Music House, piano rent, drayage, etc	31.00
Dec. 5, 1913—Fred L. Kimball Co., printing account	287.55
Jan. 12, 1914—Waterloo Reporter, advertisement	1.80
Jan. 15, 1914—Guy Thomas, beauty prize contest	20.00
Jan. 16, 1914—H. C. Ladage, expense assistant judge	7.48
Jan. 16, 1914—Hon. W. L. Harding, convention expense	16.40
Jan. 16, 1914—Prof. M. Mortenson, convention expense	11.29
Jan. 19, 1914—Stamps, mailing, etc.	20.00
Jan. 16, 1914—Roland McCurdy Adv. Co., milk contest medals	13.00
Jan. 16, 1914—Creamery Pkg. Mfg. Co., account in full	8.95
Jan. 16, 1914—Whitehead, Hoag Co., medals, badges, etc	134.56
Jan. 16, 1914—Fidelity & Deposit Co., treasurer's bond	12.00
Oct. 18, 1914—Checked out by Secretary Ross, pro rata money	690.69
April 4, 1914—Wm. B. Quarton, traveling expense	22.29
May 13, 1914—E. T. Sadler, committee traveling expense	22.00
June 9, 1914—Roland McCurdy Adv. Co., medals educational contest.	33.00
Aug. 13, 1914—Fred L. Kimball Co., 6 subs. to K. D. F	1.75
Sept. 3, 1914—Fred L. Kimball Co., job work	61.75
Sept. 30, 1914—To balance with bank	17.19
Oct. 1, 1914—J. J. Ross, salary	250.00
Total disbursements	$2,511.30
Total assets	3,953.11
Balance on hand	$1,441.81

STATE WIDE CREAM GRADING.

BY JAMES SORENSON, ALBERT LEA.

James Sorenson, manager of the State Creamery at Albert Lea, Minn., was called on and made a few remarks on the subject of "State Wide Cream Grading." Mr. Sorenson said that gradually consumers were coming to know that a poor grade of cream was being used to make butter and that as long as they did know it we would continue to have oleomargarine used as a substitute for butter. In speaking of cream grading, Mr. Sorenson said: "I believe in cream grading. I know, however, that cream grading is not practical under all conditions. I know, also, that it is not necessary for all communities. I don't believe a creamery that gets first-class cream has any business to grade cream any more than to take the very best and send the rest home. But the creamery that does receive both good and poor cream, there is absolutely no question about its being fair and just to the patrons, as well as to the creamery itself, to pay different prices for cream. Anyone familiar with buttermaking will see how unjust it is to pay the same price for cream that will only make an eighty-eight score butter that they pay for cream which will make a ninety-four score butter. But this is one of the difficulties. You go into a community and start to grade cream, paying two prices—a difference of three cents between first and second grade. If there are any cream buyers in the vicinity, the first thing they will do is to say to the farmer, 'What is the use of taking second-grade cream to the creamery? We will pay you first grade prices for it.' There are also conditions where paying for quality will not correct the poor cream evil because we have farmers who are not willing to deliver good cream even if they get a better price for it. I know of a community where the farmers were offered 10 cents more for sweet cream and they refused it. These farmers were only in the dairy business as a side line. I believe cream grading is a matter of fairness to the patrons, and that wherever possible we should pay a better price for good cream than we do for poor cream."

Mr. Sorenson said that Freeborn county, Minn., has been grading cream and milk ever since the creamery business started in that county twenty-five years ago. The creameries adhered to this plan strictly, although they only had one grade and that was a sweet, clean product which could be made into butter that would bring the top-notch price. Mr. Sorenson didn't think it practical to attempt to introduce state-wide cream grading as it would be impossible to get all parties to agree on the same grade. The per cent of acid, according to Mr. Sorenson, is indicative of the kind of cream delivered, and the kind of cream delivered indicated the kind of work done on the farm. For this reason, he recommends the acid test to determine the quality of cream. He suggested placing a limit of .25 per cent acid as the limit for first grade cream and from .25 to .6 for second grade. Cream containing .8 per cent or more should not be sold. State wide cream grading would eliminate cream stations.

DISCUSSION.

State Dairy and Food Commissioner Barney spoke briefly at this time touching the most important points covering dairy conditions in Iowa. He first expressed his regret of the present conditions existing in the creamery business. After outlining what his department has been doing, he said that in his opinion it would be necessary to do a certain amount of work among the patrons of creameries. To illustrate his idea, he told of a creamery in Iowa where poor cream was being delivered. An inspector was sent to the creamery, who went over the territory and found two patrons who were producing cream under unsanitary conditions. These two plead guilty and were fined and cleaned up their dairy. Mr. Barney said, however, that he did not have enough men to do this work as it should be done.

Prof. M. Mortensen, of Ames, was the official butter critic. He was called on and said that there were 151 entries with an average score of 92.12. The butter made from whole-milk scored on an average of 94.3, from gathered cream, 93. He said conditions were favorable for the production of a high class quality. He complimented the buttermakers on the fine quality, saying that as a whole the exhibit was a credit to the state. There was a gasoline flavor in a few samples, which was doubtless absorbed by the cream on the farm or at the creamery. Just a few samples were criticised as having an old cream flavor.

Mr. Mortensen, who recently returned from Denmark, where he made an extensive study of the creamery business of that little country which produces such high class butter, stated that the buttermakers of Denmark made a quality of butter with a firm waxy body, which was due to the methods used in working. They churned the cream at a low temperature, and worked the butter two or three times instead of once, as is the case in this country. He stated that it was not necessary to maintain high temperatures and work butter only once to incorporate a reasonable amount of moisture. He also gave a brief outline of the methods used in scoring butter in Denmark by keeping it at least two weeks before being scored, and he recommended that the same practice be inaugurated in Iowa, as it would indicate the keeping quality of the butter, and would give the buttermakers information which would be valuable to them in making butter which had a better keeping quality. He said it was an erroneous idea that the Danes did not like aroma, but they ripened the cream to a low degree of acidity, and depended upon the flavor developing after the butter was made. He recommended that all buttermakers should score their butter after it was made two or three days. This would enable them to discern if the butter was mottled, and if the flavor was much better than if it was scored immediately after it came from the churn. Mr. Mortensen stated that the American people had the money, and many of them were looking for a high class butter, and if this demand could not be supplied at home, foreign makes of butter would be used. He stated that Denmark was in position to export about twice as much butter as is made in the state of Iowa. Holland also made a good quality, and the possibility of securing butter from there was good, that they had a surplus of about one hundred million pounds annually. He also favored the call system at the scoring contests. That is, the buttermakers should not be informed in advance when the contests are to take place, that they should be required to take a sample of their daily make, and send it to the contest. Mr. Mortensen also outlined the branding of butter as it is being conducted in Denmark, which he considered efficient, and had built up the dairy business of that country. Creameries which had been granted the use of the brand were called upon at intervals to submit samples of their product. If it did not come up to standard, other samples at intervals of a few days would be asked for, and if the quality was not standard the authorities were notified, and the brand was taken away from the creamery. This would practically shut off their market, and if any creamery could not dispose of their product in that way it meant a great sacrifice to them, and would soon result in closing the plant.

Mr. Mortensen made one very strong point, that the creameries should bear in mind,—he said that any movement such as the branding of butter must come from the creameries. There must be a demand from them. They should be the instigators and ask for the privilege of using the brand, and they should go before the Legislature the next season and ask for a law permitting the branding of butter. These remarks impressed the audience very much, and it devolves upon the buttermakers and creameries of the state of Iowa to take this matter in hand, and do the preliminary work which without the sentiment and backing of the creameries would amount to but little.

Following Professor Mortensen's talk, Martin H. Meyer, secretary of the National Creamery Buttermakers' Association, spoke briefly about the association and of the convention for 1915.

J. J. Brunner, secretary of the Iowa Buttermakers' Association, spoke briefly on the subject of "Are We Progressing?"

E. M. Wentworth said: "Since the Iowa State Dairy Association and the Iowa Dairy Cattle Congress have met in conjunction, the Dairy Cattle Congress has contributed prior to this time $2100 in cash and has given the association 1000 free memberships. These buttons which we wear, up to 1000, are donated by the cattle congress. We have a chance now to show our appreciation and help our sister organization out at this time when Providence has been so unkind. The kindliest thing we can do is to remit the money they paid us for being here with them. Understand, no member of the Dairy Cattle Congress made this suggestion. We learned that various exhibitors have refunded their cash prizes and it occurred to us that we do the same. Mr. Chairman, I put this as a motion.

(The motion was seconded and unanimously carried.)

The election of officers resulted as follows:

President, W. B. Quarton, Algona.
Vice-President, W. H. Chapman, New Hartford.
Secretary, J. J. Ross, Iowa Falls.
Treasurer, E. T. Sadler, Waterloo.

RESOLUTIONS.

The resolutions passed were as follows:

The Thirty-eighth Annual Session of the Iowa State Dairy Association again meets in convention with the Iowa Dairy Cattle Congress, and the mutual interests bear testimony to the value of producer and manufacturer getting together. Intensive agriculture to dairying is the surest reward of effort and conserver of our soil and wealth.

We wish to call the attention of our coming Legislature to the need of additional help in the Dairy Commissioner's Department.

We commend the Dairy Commissioner, the Buttermakers' Association and the Dairy Cattle Congress for their faithful and conscientious work.

We heartily recommend the efforts of the Iowa Commissioners to the Panama-Pacific Exposition to have the livestock interests of our state properly represented at San Francisco in 1915. We look upon the effort as the most practical and intelligent method of extending the markets for our farm animals in the newer agricultural sections of our Nation, and to the lands bordering the Pacific.

We note with deep regret that death has since our last convention taken from our midst our oldest member, Mr. Erve Mitchell, and we tender our sympathies to the relatives of the deceased in their bereavement.

We acknowledge the courtesy of the press and the public of Waterloo, and trust their hospitality and public spirit will meet full returns.

Mr. Wentworth expressed a wish that a greater effort be made next year to get out the old officers and the old members of the association for a good old reunion.

Mr. Ross suggested that a copy of the resolutions relative to Mr. Mitchell be sent to the railroads.

BEAUTY CONTEST.

In the Beauty Contest, photographs of the grounds and buildings were submitted and judged at this convention. G. Steussi, of the Farmers' Co-operative Creamery Company, Thorpe, Iowa, won the first honor and was awarded a cash prize of $20 besides the loving cup valued at $50 which was given by Professor Mortensen.

C. F. Bollig, of Fenton, won the second prize and received $15. Guy Thomas, of Clear Lake, won third place.

RETAIL MILK DEALERS.

The Executive Committee of the Iowa Retail Milk Dealers' Association met in Waterloo during the Dairy Cattle Congress and decided to hold its next convention at Cedar Rapids. The meeting of the association at Waterloo was well attended and considerable interest manifested. Eleven samples of milk were entered in the contest. The Shoemaker-Van Pelt-Mayne Company, of Waterloo, won the gold medal with a score of 95.5. Their bacterial count was 60. W. E. Stanton, of Estherville, won the silver medal with a total score of 92.25. His bacterial count was 260. Addresses were made by Ernest Kelly, of the United States Dairy Division, Prof. A. J. Hauser, of Ames, who scored the milk, Dr. O. P. Thompson, state milk inspector and Hon. W. B. Barney, state dairy and food commissioner. Approximately twenty-five milk dealers were present.

THE SILO AND PROSPERITY.

BY H. E. COLBY.

The silo is the trade-mark of the prosperous farmer. It stands as a sign pointing the wayfarer to the most successful of farmers in the community.

Silos are as old as civilization. We read in the ancient records that the Egyptians preserved feed for their stock by storing it in pits or caverns in the ground and using it as occasion demanded later in the season. This feed developed really in the form of silage. These were the prototypes of the pit silos that are becoming so popular in sections where the ordinary silo is apt to blow over, or to cause trouble in various ways. Pit silos are undoubtedly of great value to farmers in meager circumstances, but they have no advantage over the other silos in those sections where prosperity will permit the regular silo to be built whether it be a stave, hollow tile, or a cement structure.

The next step in silo building leads us back to the pioneer days of the dairy industry, which in terms of time means about forty years ago in this section. A few of the more venturesome farmers saw fit to construct in corners of their barns square bins, air tight, or as nearly so as possible, and into these they put the green crop, especially corn.

These square bins could not permit of thoroughly packing the silage, and, as a result, there was much lost feed in the corners and around the outer edges. To prevent this, the next stage in silo building shows the corners cut off, making a sort of an octagon structure that was superior to the previous one, but not equal to the perfectly round, smooth surface of the modern silo that is found practical for every up to date farm of today.

Comparatively a few years ago, a speaker on the subject of silos found it necessary to introduce his remarks very clearly and in definite definition of what the silo is, what its purpose is in the economy of the farm, what its reason for existence in the equipment of modern up to date dairy plants. It was necessary in those times to discuss fully all the crops that were available for silage purposes. It was necessary to tell how to plant, to harvest and to store the silage. We also found it necessary to tell how the silage should be used in winter. Today it is no more necessary to go through with all this preliminary explanation than it is to explain the purpose and use of the corn crib.

SILO IS POPULAR.

The growth of silo popularity has been phenomenal. In one community not far from this office there is practically a silo on every farm, and on a number of farms there are two. Seven years ago this was not the case. At that time it was a problem to convince the farmer that he should have a silo. He felt that it was just carrying a lot of useless water up with the corn and storing it away for winter use. But these people have come to see the necessity of succulent feed for winter use.

The cow is so constituted that she makes her best record during the early summer, before the excessive heat, before the flies annoy and while the pastures are in their prime. Now, if the farmer can duplicate these conditions in the barn, he can keep his cows on the standard of pasture production throughout the entire year. That is the ideal system, and that is the reason a succulent feed is so necessary and is used so generally by all successful dairymen.

A few years ago Chas. L. Hill, one of the most prominent breeders of Guernsey cattle in the United States, and president of the American Guernsey Cattle Club, in speaking of the Iowa State Dairy Association, said: "I find that my cows will eat silage every day in the year, even though they come up from a rich, luscious pasture." This may not be the gentleman's actual words, but it is the thought he expressed, and it's a thought that has remained with some of the dairymen ever since that time.

In those days it required missionary work to convince the farmer that he should have a silo. The policy that Mr. Hill followed is practically universal now among the dairy farmers of this country, and, by dairy farmers, is meant those men who are actually making a great success with their cows. The silo is universal in its adaptability to farm conditions. It is suited to the southland and to the far north, where the winters sometimes begin early and the warm spring breezes do not blow until well along in May. Here the crops that are gathered and put into the silo will be a little different from those of the corn belt, although the universal silage crop is corn.

There is a peculiar thing about this northern section. The summer sun is short lived, the growing season is more brief, but, for some reason or other, vegetable growth is more rapid, and crops seem to mature more quickly, than in those sections where the seasons are long. For that reason, it is possible to harvest a crop of corn for silage purposes even in the far north of this country.

The silo is also adapted to the southern sections, where the cow may feed on the natural pasture for from nine to eleven months in the year. These southern tillers of the soil find that there will be periods when the pastures are dry and feed is uncertain. For such times the silage is a very present help and the flow of milk is held up because of this succulence that can be given when needed.

In the corn belt, where the year is equally divided between pasture and stable seasons, where it is necessary to take the cows from the field the 1st of November and keep them under largely artificial conditions until the following April, the silo is a supreme necessity. Many of the mortgages that have been lifted are directly traceable to silage fed cows. These milk checks are invariably larger and more satisfying to all dairy farmers when the herd is developed and fed on good corn silage.

CORN IS BEST SILAGE CROP.

The best silage crop is corn. Other feed may be used, but corn is supreme. Some have found sorghum very excellent for purposes of this kind. Some use alfalfa, or that part of the alfalfa crop that is cut in rainy weather. It frequently happens that the first cutting of alfalfa comes when the early summer rains make it almost impossible for the farmers to harvest their crop without having it seriously damaged. If this is the case, the alfalfa may be run directly into the silo, and feed that would otherwise be materially injured is thus saved in the best of condition.

Others have found that Soy beans, or cow peas, work very nicely in the silo; still others have used the small grains, cutting them at the time when the plant contains the maximum amount of succulence without being too sappy.

One general characteristic must be borne in mind, however, that is, any crop that is hollow-stemmed does not serve as well for silage, because it is more difficult to keep the air entirely out of the feed.

The keeping quality of silage depends upon absolute exclusion of air. When the air comes in contact with the silage, either through the leaks in the silo wall or through improper packing at the time the silo is filled, decayed silage is inevitable. Frequently a space from eighteen inches to two feet all around a knot hole, or a little cavity in the silo will be spoiled silage. This shows the extreme importance of properly packing silage when the feed is being stored.

Perhaps the most ideal silage, from the theoretical standpoint, is made of corn and either Soy beans or cow peas mixed, about two parts of the corn to one part of the other plant. This furnishes, in addition to the carbohydrates of the corn, considerable protein in the other plants. As suggested, such silage is superior to all others theoretically, but it is not always practical.

SILO PRESERVES PLANT'S FOOD VALUE.

The supreme advantage of the silo is that it saves all of the food value of the plant at a time when it is most suited to the animal nutrition. There are certain seasons of the year when the corn plant or any other crop contains the maximum amount of food value. If it is left to ripen in the field, the plant tissues become woody, and it naturally loses much of its nutritive value. It is impossible to use the entire crop just at the right time, and, as a result, a loss is inevitable. If the crop is put into the silo, it is all saved, and the work of the season is not spent on a crop, 40 per cent of which will be left to be bleached out by the winter winds. Thus it is that silage is most economical for feeding.

Silage is not, by any means, the entire ration. In fact, the farmer who tries to depend upon silage exclusively will find that he is working along the wrong lines; but silage is the foundation of every successful dairy ration because of its succulence and because it is so well adapted to keeping the cow's system in the best of condition.

The silo has its place, too, in the maintenance of soil fertility. In a field of corn, 40 per cent, or at least 25 per cent, of the food value remains in the stock. This, if it is left standing in the field, is of little value to the soil. There is a certain amount of humus that works back into the land, but not very much that becomes quickly available.

Now, if this same field of corn were put into the silo and fed, practically the entire plant would be utilized by the cattle, and it would go back to the soil in the form of barnyard manure—the richest and most complete fertilizer that can be found in this section of the country. Therefore, the silo is an important factor in maintaining soil fertility, as well as in maintaining the herd at its maximum production throughout the year.

There are various kinds of silos. All are good. All have their good points. People are in the habit of proclaiming that one is superior to all others, just as one man will tell you that the Guernsey cow is better than every other cow, while another will stand up for the Holsteins, or the Ayrshire, or the Jersey. But all silos are good, and it is only a question of which is best adapted to your particular locality, or to your particular need.

SILAGE ESSENTIAL AS DAIRY FEED.

The great question is not what silo to put up, but to build a silo. You may make it of staves, you may make it of panels, you may make it of hollow tile, you may make it of cement blocks, you may make it of concrete in monolithic form, you may make any kind of silo you like, you are even entitled to dig a pit silo, if you think that is the only kind suited to your needs; but, under any circumstances, build a silo, because upon that class of feed depends the greatest efficiency and the greatest productive capacity of your dairy herd. It is the economical feed, it is the feed that is best adapted to your conditions, and, therefore, it is a feed you should have for your herd.

It is not business sense for the farmer to work six, or eight, or ten months in the year on a crop, and then leave 40 per cent of that crop to wither in the field. He cannot afford to harvset 60 per cent and leave the balance as a wasted by-product. The correct system is to use the entire crop, and use it all, to the very best advantage. The watch word of the present era is efficiency, and efficiency means the best use of every agency that comes to hand in developing and completing the work of the year. Silage puts all the corn at the farmer's disposal. It prevents this 40 per cent loss, and in this respect it is one of the greatest blessings that modern agricultural research has given to the farmer. The silo is not a modern institution. It is as old as agriculture, but it has never been so successfully developed as at the present time.

Many a great manufacturing concern has made a large share of its wealth out of the by-products. It remains for the farmers of this country to find in the by-products of the corn crop, which are in the stalks, the profit that is justly theirs. It is an all-the-year-round necessity on every practical dairy farm.

SOILING CROPS TO SUPPLEMENT IOWA PASTURES.

BY H. H. KILDEE.

The pastures upon most Iowa farms do not furnish enough feed for the cattle during the hot, dry months of summer. The problem of supplying the necessary feed most economically is important, and may be solved by one or a combination of the following methods:

1. Better care and management of pastures.
2. Use of summer silo.
3. Use of soiling crops.

Better care and management of pastures is absolutely necessary to secure the best results from our farms. In every neighborhood practical demonstrations may be found that a little care given to a pasture will greatly increase its production of feed for live stock. But this in itself is not enough for dairy farmers or for many beef cattle growers. To secure the greatest possible returns from their farms, they find it to their advantage to keep more cattle than they can properly pasture without the aid of silage or soiling crops. The use of silage or soiling crops upon dairy farms results in a saving of land, fencing, food and manure, and in greater and more profitable production of milk.

SILAGE OR SOILING CROPS.

Whether corn silage or soiling crops will be more economical and efficient in supplementing the pasture will depend somewhat on specific conditions. The experimental work which has been conducted along this line has not furnished very conclusive evidence in favor of either.

Evidently a silo small in diameter filled for summer use is the most satisfactory and economical solution of the problem on the average Iowa farm. Most of the soiling crops require more labor in getting them to the animals than the average farmer who practices mixed farming wishes to spare from the field work in the busy season of the year.

However, the man who has a large herd of dairy cattle and wishes to secure the best possible returns from his acreage will find it to his advantage to grow some soiling crops. There is nothing better than fresh, palatable, nutritious green feed to stimulate milk production. Then, too, by having in each mixture a leguminous plant, soiling crops can be grown that are superior to corn silage in balance of nutrients. Another class of farmers who would profit by the use of soiling crops is the renters who cannot persuade their landlords that silos are necessary fixtures upon farms. To these classes must be added the men who have not put up silos yet and who wish to grow crops to feed in addition to their pastures during the coming summer. All of them may adopt the common practice of cutting green oats, sweet corn and field corn to tide the cattle through the short pasture period, but that is not as satisfactory or profitable as to grow crops that are adapted for this purpose and can be cut at the proper stage of maturity.

In answer to the many questions which are being received at the Iowa Agricultural Experiment Station, this circular on soiling crops has been prepared.

SYSTEM EMPLOYED ON COLLEGE DAIRY FARM.

During the past three years soiling crops have been successfully grown and used upon the Iowa state college dairy farm at Ames. Such varieties have been grown as would furnish a succession of green feed to supplement the limited acreage of blue grass pasture. Under this system the cows have been turned into the pasture nights and forenoons and then put in the barn about 2:30 p. m. and given a liberal allowance of the freshly cut green feed. Under ordinary dairy farm conditions, the above, or partial soiling system, is more satisfactory than to keep the cows confined all the time and haul all the green feed to them, as is done on some of the larger dairy farms. It is also much more satisfactory than to feed the cows the green feed on the ground in the pasture, as is sometimes done, with much soiled and wasted feed as a result.

RESULTS OBTAINED.

Increased production of milk from decreased acreage has been the result secured from this system of soiling crops. By bringing the cows into the barn at the time of day when the heat and flies are especially troublesome and spraying them to remove flies, it is made possible for them to eat their feed in comfort. Thus they are enabled to keep up a normal flow of milk when they would ordinarily decline seriously. We have also found that because these palatable green crops are used, less grain needs to be fed our heaviest producers and that ordinary producers may be kept up in production and condition without grain.

In 1911 thirty-seven cows were kept on nineteen and one-half acres of pasture and in addition were supplied with the soiling crops from eight acres. Counting the land devoted to both pasture and soiling crops, each cow was kept the entire season on .74 of an acre. The value of the soiling crops may be fully realized when it is remembered that the summer of 1911 was one of scanty rainfall and many farmers in the vicinity of Ames were allowing two and one-half to three acres of pasture for each cow. In 1912 forty-five cows were kept on the nineteen and one-half acre pasture and in addition were allowed a trifle over six acres of soiling crops—or each cow was kept on about .6 of an acre. In addition to this, in 1912 the cows grazed on a fifteen-acre meadow for a few weeks, beginning about the middle of August. It was found in 1912 that the entire cost of pasture and soiling crops for each cow, counting rent of land, labor, seed, etc., was only $6.62 for the entire pasture season.

LABOR.

The objection usually raised to growing soiling crops is the amount of labor necessary to cut and haul the feed to the cows each day. We have found that this takes two men about one and one-half hours each day. In 1912, with the larger number of cows it was found that a team and mower could be used to good advantage in cutting the daily allowance of feed. Considering the value of soiling crops in increasing production and decreasing cost of production of dairy products, it will be found that excellent returns are secured for time spent.

CROPS GROWN.

Oats and Canada Field Peas: We have found it most satisfactory to make two sowings of this standard crop. We put in the first plot as soon as the ground is ready for oat seeding in the spring and the second about two or three weeks later. We use an early maturing variety of oats in sowing first plot and a late maturing variety in the second seeding. This first sown plot is usually ready for cutting about June 15 and the second about July 5. When sown at the rate of one and one-half bushels of oats and one and one-half bushels of Canada field peas per acre, excellent results have been obtained. Some, however, advocate using one-half bushel less of the Canada field peas. The grain drill is the most satisfactory to use in putting the crop in. It is best to sow the peas first and deeper than the oats. However, excellent results were secured where the two were sown together.

In 1912 the yield from the first sown plot was five and one-half tons of green feed per acre and from the second sown plot 4.38 tons per acre. In 1911, due to lack of rainfall, the yield was somewhat less, ranging from four to four and one-half tons per acre.

The question of how large a plot should be sown for a certain number of cows is oftentimes asked. However, this is a question that should make excellent hay. In 1912 for the forty-five cows on nineteen and one-half acres of pasture, we had 1.71 acres in first plot and .8838 acres in second.

Fodder Cane: This is an excellent and widely grown forage plant. In our work we have found it to yield very heavily and to be very palatable and nutritious. Cattle eat it readily and waste but little of it if fed in a manger, except when the cane is advanced in maturity when the animals will leave some of the larger stalks if heavily fed. If sown early in May the cane will be ready to start cutting about July 10. It should be sown in limited areas so that part of it will not become mature before it is fed. Upon rich ground it is best to drill the seed in with a grain drill using all the drills as a dense growth results in finer stalks with less fibre. Sowing in this way requires about seventy pounds of seed per acre. In 1912 the yield of green cane was 23.28 tons per acre.

Fodder Cane and Cow Peas: This combination has proved to be one of the best we have tried. As a feed it has given better results than either cane or cow peas alone. This is due no doubt to the fact that the combined crop is more palatable than cow peas alone and more nearly balanced in nutrients than cane alone due to the protein in the cow peas. This crop can not be safely put in until the ground has become warm. We drill it in soon after corn planting. Our experience would indicate that from the time the ground is warm enough for the cow peas until the first frost comes in the fall that no better crop can be grown for soiling purposes. It is best to drill the cow peas and cane separately; the rate of seeding used has been one bushel of cow peas (Whip-poor-will or New Era varieties) and thirty pounds of cane seed per acre. The yield of green feed per acre in 1911 was about ten tons while in 1912 it ranged from 7.1 tons upon rather poor soil to 14.62 tons upon good soil.

Millet: This is not as good a crop for soiling purposes as the ones just mentioned, but as it is not materially injured by a light frost it may be used later in the fall than the cane and cow peas. The plot of the ground used for the first sowing of oats and Canada field peas may be plowed after the removal of the crop early in July and sowed to millet. By sowing the millet about July 8, in 1911, a fairly good yield of millet was secured and due to the delayed heavy frost, it was used until October 26. In 1912, however, the heavy killing frost came so early that practically none of the millet could be used for soiling, but was cut for hay. Millet has been sown at the rate of three pecks per acre and has yielded from two to three and one-half tons per acre.

Alfalfa: Green alfalfa may be utilized for soiling three times each season and it is needless to say that it is one of the best crops. It is first ready early in June just before the oats and Canada field peas and then again just before the cane and cow peas are ready for use. The third cutting comes on just when the cows appreciate a change from the cane and cow peas.

Other Crops Grown: Rye has been tried but found to be inferior as a soiling crop. While it is of value as an early pasture it is deficient as a soiling crop because it comes on when it is not usually necessary to supplement the pasture and it is in proper stage of maturity for soiling, but a very short time and it lacks palatability.

Cow peas and soy beans have not been found to be especially valuable as soiling crops when grown alone, although when grown with cane the cow peas are excellent. While they make excellent hay, as green crops they seemed to lack palatability.

Because upon most farms sufficient pasture is allowed to give the animals the necessary feed until the middle of June at least, the following outline of a succession of soiling crops will doubtless prove of value.

SUCCESSION OF SOILING CROPS USED ON THE IOWA STATE COLLEGE DAIRY FARM.

Approximate time of cutting	Crops	Approximate time of sowing	Rate of seeding per acre	Average yield of green feed per acre
June 10 to June 15	Alfalfa	Spring or August	20 lbs.	8 tons
June 15 to July 5	Oats and Canada Field Peas	April 5	1½ bu. oats 1½ bu. peas	5 tons
July 1 to July 10	Oats and Canada Field Peas	April 20	1½ bu. oats 1½ bu. peas	5 tons
July 10 to July 15	Alfalfa	Spring or August	20 lbs.	4 tons
July 10 to July 20	Amber Fodder Cane	May 5	70 lbs.	20 tons
July 15 to August 15	Fodder Cane and Cow Peas	May 15	30 lbs cane 1 bu. cow peas	12 tons
August 15 to September 20	Fodder Cane and Cow Peas	June 10	30 lbs. cane 1 bu. cow peas	12 tons
September 20 to heavy frost	Millet	July 10	3 pecks	3 tons

The first cutting of alfalfa yielded 2.96, the second cutting 1.46, and the third 2.61 tons of cured hay per acre in 1912.

VALUE OF THE DAIRY SIRE.

BY HUGH G. VAN PELT.

The subject assigned to me is not only one of vast importance as it pertains to improving dairy conditions, but it is broad in its scope. It permits the speaker to treat upon the selection as well as the care, handling and feeding of the dairy sire. Volumes can be and have been written on these various phases. I shall treat only on suggestions pertaining to the selection of the sire. It is the most important phase of the subject and in too many instances given too little thought and study. The judgment and discretion used in selecting bulls determine the future of the herd. Success in breeding any class of live stock depends upon the character of the sires. So often has it been said the sire is half the herd that we have learned to believe but not, in a large percentage of cases, to heed it. The statement is true, however, and radical as it may appear it is not sufficiently sweeping to illustrate the worth of a good sire or the worthlessness of a poor one, for given a herd of cows the sire is the controlling factor in establishing or eliminating the quality of the herd from the standpoint of breeding.

No breeder of live stock has ever made advancement who has not recognized this fact and unless you are willing to make it your plan to use only sires that bear the stamp of excellence, your herds will deteriorate rather than improve regardless of all other factors. It is true that proper care and feeding are necessary and of vital importance, but reckless breeding can never be corrected by good feeding any more than poor feeding can be corrected by careful breeding. These go hand in hand and one without the other spells failure as surely as the two together assure success.

POOR SIRE A MONEY LOSER.

There is no logical reason why any intelligent dairyman should use a poor sire. There is no scarcity of good animals and no breeder of dairy cattle should use a poor bull as long as there is a good one in America. I wonder how many have really thought how differently good and poor sires affect your herd and your bank account. Here is an example that is being demonstrated every year on thousands of American farms. A dairyman has fifty fairly good cows averaging 200 pounds of fat annually. He is sure he needs a bull. He makes his selection almost wholly from the standpoint of cost and prides himself on being shrewd when he places a bull at the head of his herd which, although pure bred, cost but little, and is worth less. He uses him two years, or until his first daughters come into milk. Granting 50 per cent of his calves are heifers, and allowing a 20 per cent death loss, he has sired forty cows. These cows yield annually only 190 pounds of butter-fat, or ten pounds less than their mothers. This loss, at 30 cents per pound, equals $3 per year for each cow—$120 per year for the forty. Not so much, but keep them in the herd for ten years, which should be the working life of a good cow, and the total loss is $1,200. This measures the real value of this bull—$1,200 less than nothing. This is not an exceptional case, for I venture the assertion that there are thousands of bulls in service today that are lowering the average annual yield from ten to fifty pounds. Any dairyman who is wise enough to weigh and test his milk will learn from this a lesson and use care and judgment in selecting his next bull. The following result is not too great to attain. A sire may be secured that is so good his forty daughters will yield 100 pounds more butter annually than did their mothers. At 30 cents per pound, this equals $30 each, annually—$1,200 for the herd, or $12,000 gain during a ten-year period. The bull need not cost a great price in the beginning, but what is his real intrinsic value?

Any dairyman who thinks seriously on this question will seek information that will aid him in avoiding the poor bull that is costing farmers millions yearly.

ESSENTIAL POINTS OF GOOD BULL.

It is a most difficult task to find a bull capable of increasing perceptibly the production of a herd that is yielding from 300 to 600 pounds of butter-fat a year, but the task is simple with herds averaging from 150 to 300 pounds. To begin with, the dairyman must have clearly defined in his mind the purpose for which he is selecting a bull. If it is merely for increased production fewer factors need consideration than if a true breeder is desired to better the appearance, type, uniformity, character, and conformation of his herd. Being compelled to admit that it is possible to secure both excellence of conformation and production in one and the same animal, I am going to offer you the following suggestions, and I trust you will give them careful consideration. When you go home, study the pedigree of the bull you are using, note carefully his conformation, and, above all, determine whether or not his daughters are an improvement over their mothers. If he is not up to the standard, get rid of him and set about it diligently to select his successor with the following points in mind:

First, breed; second, pedigree; third, masculinity; fourth, prepotency; fifth, individuality; sixth, age; seventh, cost.

I mention breed first because it must be first determined before the other points can be given intelligent consideration. Taking it for granted your experiences have proved to you that your selection should be made from one of the dairy breeds. I suggest that you choose the breed you like best, for a man will unconsciously give better care to stock he admires. Bear in mind that those who are guiding the destinies of each of the special dairy breeds are aiming at one end, namely, great and economical production of milk and butter-fat. There are good animals and poor animals in every breed.

DAIRY COWS VS. DUAL PURPOSE COWS.

It is true the world today faces the most serious shortage of beef that it has ever known, but this is hardly the dairyman's responsibility. Some would lead us to believe so, but whenever the packer is willing to share his profits with the producer there are millions of farmers ready to raise beef, and their services, though valuable in that direction, are worth little in the dairy world. It is not for the dairyman, who also sees a shortage in dairy cattle and dairy products, to leave his chosen field to compete in this class producing 8 cent beef instead of 30 cent butter in response to the plea to feed the world juicy steaks, and thereby swell the millions of a few. If it is profitable to produce beef, grant the profits to the man whose business it is to raise beef. Your conditions are such that you cannot afford to do so. You are located close to markets, where dairy products are always high. Your lands are high-priced, and your farms not extensive. To make real tangible profits, your methods of farming must be intensive. Therefore, you want cows that will return the greatest amount of human food for the least amount of feed. Analyze the dairy and dual purpose cow for the purpose. It's a common dairy cow that will return 300 pounds at 30 cents per pound, or $90 worth of butter-fat in a year. She eats no more than the dual purpose cow and requires no more labor. Veal the calf, if you please, and allow the manure and skim-milk to pay for labor. Grant that it costs $50 a year to feed her. She gives you a profit of $40. A million dual purpose cows in the state of Iowa are averaging only 140 pounds of butter-fat a year, which, at 30 cents per pound, brings $42. Give the calf credit of being worth $10 the day it is born. Add this to $42, the value of the butter-fat, and charge the $50 worth of feed to the cow. It leaves a net profit of $2 for milking the cow some 700 times, as compared with $40 in case of the special dairy cow. You have labored in the interest of a commendable cause—that of producing rib roasts for a hungry people, and great profits for a rich but thankless middleman. Does it pay? In the above comparison, taxes, interest, insurance and depreciation have been considered as equal in each case.

PRICES HIGH FOR DAIRY CATTLE.

It is necessary to allow a value for the dairy calf, because, as you are aware, there is a tremendous and growing demand for good dairy cattle all over the world, and prices rule higher for them than for any other class of cattle. It is being demonstrated that nowhere in the world can more productive and more typical dairy cattle be raised than along the western coast of America. This fact, together with your excellent present facilities for exporting and the added facilities which will come with the opening of the Panama canal, provides you with opportunities of bringing the world to your doors whenever you have pure bred live stock of a special purpose for sale. But you say, "there is a value for the dual purpose cow that has been omitted. At the end of her milking life there is a canning value of 5 cents per pound for 1,200 pounds, or $60." Likewise, there is a lesser value for the dairy cow, but she has served you well. During her ten years' milking period, she has yielded you $380 more than the dual purpose cow that you have milked at almost a loss, looking forward to the day you could cash in her bones and hide. Sell the dual purpose cow to the canner for $60, if you please, but in honor to the cow that has swelled your bank account, brought you profit, removed the mortgage from your farm, builded your home, educated your children, and made you prosperous, buy a quarter's worth of chloroform, let her die easily, and hire a man to dig her grave. You will still have a hundred more dollars than the other cow earned.

Having decided the breed, secure a pure bred sire whose pedigree is not only reliable, but also vouches for the fact that his ancestors were productive and profitable.

BULL MUST HAVE GOOD ANCESTRY.

Do not think because a bull is pure bred and has a pedigree that he must necessarily be a good bull. The value of the pedigree is measured by the story it tells. Demand that the pedigree of your bull proves beyond a doubt that his material ancestors back for six generations were great producing cows and good individuals, and that his sire's ancestors were sires of such cows. Avoid the pedigree that merely sets forth the fact that the bull has ancestors. Such a pedigree is valueless. The presence of the bull assures you that he had ancestors. Remember that one of the greatest laws of breeding is that, "like begets like, or the likeness of an ancestor," and that the greatest improvement of all breeds of live stock has come through the recognition of this law. Therefore, it is not enough that your bull have a good productive mother. The offspring may, and likely will, revert in certain characteristics to ancestors more remote, and the thoughtful breeders demand that all female ancestors, for at least six generations, show in the pedigree of the sire by tabulated records that they have been producers.

Then, if the pedigree also shows that the paternal ancestors have been the sires of productive offspring, it is reasonably safe to assume that whether the bull begets his own or his ancestors' likeness, the results will be an improvement. Considering these facts, it would seem scarcely necessary to advise against the use of a grade sire. Yet I know dairymen, otherwise very intelligent, who are using grade bulls. Their excuse is that their bulls have good mothers, and they believe this sufficient evidence that they will also have good daughters. Knowing nothing, however, about the grandmothers, great grandmothers and more remote ancestors, it is a fallacy to believe that there is a certainty of the offspring being uniformly even a creditable lot.

SIRE MUST BE MASCULINE IN TYPE.

The sire must be masculine in appearance and be endowed with that strength of character which is indicated by large, bright, prominent eyes, between which the face is broad and, in all, impressive in appearance, stamping him as having the power of transmitting the characteristics of his ancestors. Bulls with dull, sluggish eyes, narrow heads and necks, lacking the characteristic bullish crest, and effeminate in appearance, are to be avoided, for, excellent as may be the records of ancestry, the indications are that their valuable traits will not be perpetuated by the sire in question, for he lacks the most essential points indicative of prepotency. If the cows upon which he is used are strongly bred, either along acceptable or meager lines, they will each quite likely reproduce their characteristics, or those of their ancestors, with the result that the increase in the herd will lack uniformity and be a heterogeneous collection of individuals, good, poor, and indifferent, according to the character of the various blood lines.

If production is the sole aim for which the dairy herd is builded, less attention need be paid to the individuality. Yet, the point is, by no means, unworthy of careful consideration. It is a fact well recognized that if a cow be productive and profitable to own, she must combine in her conformation the indications of well developed constitution, capacity, nervous temperament, blood circulation and ability. The most certain method of building a herd of cows endowed with these vital points is to demand that all sires and the ancestors of all sires used possess them to a marked degree. Then, as surely as "like begets like or the likeness of an ancestor," the resulting daughters will not be faulty in conformation. From the standpoint of individual conformation, therefore, the sire should indicate great strength of constitution, with very large, open, well distended nostrils, great depth from the top of the shoulder to the floor of the chest, well sprung fore-ribs, giving great capacity for the development of heart and lungs. Supplementary to these points, if he is vigorous and rugged in appearance, acceptable constitution is indicated. If he is capacious, he will have a large mouth, great length from shoulder to hip bone, and well sprung, deep ribs, assuring a roomy barrel for the storage of great quantities of foods, both concentrated and bulky. In addition, the soft, pliable and elastic hide, covered with hair that is silky and fine, vouches for a digestive apparatus that is strong and has the power of utilizing, efficiently and readily, the food the animal may consume. The digestion of the animal is either temporarily or permanently inefficient if the hide is hard and resistant to the touch and the hair is coarse and wiry.

NEEDS WELL DEVELOPED NERVOUS TEMPERAMENT.

As truly as cows that lack a well developed nervous temperament are loafers and unprofitable, so is a bull worthless who begets daughters wanting in this respect. The useful dairy sire indicates, more clearly than does the female, excellence of dairy temperament. This does not suggest that he is an unruly critter, but that because of a head broad between very large, prominent, bright eyes, he possesses brain power sufficiently strong to control the great nervous system which is demonstrated by a prominent, open-jointed backbone, a muscular body, free from beefiness in all parts, and a general appearance of activity. Bulls with dull, sluggish eyes, inset, and close together, are of a slow, sluggish, passive temperament, usually beefy in conformation, and beget daughters that are predisposed to convert their feed into beef worth from 5 to 8 cents per pound, rather than butter-fat worth upwards of 30 cents per pound.

As surely as it is desirable for cows to have large, tortuous mammary veins, numerous and large milk wells, and large udders, and medium-sized, well-placed teats, so it is necessary that the sire in use has well-defined mammary veins and milk wells of the same character and rudimentary teats that are reasonably large, placed far apart and forward of the scrotum; so that, through inheritance and possession, he may transmit them to his daughters.

As the cow's ability is indicated by an udder of quality and texture, hung high behind and extended far forward, the bull's quality and conformation should be such that he will transmit these essential points. Cows long from the hip bone to the pin bone have udders comparatively long, while cows short between these points have comparatively short udders. It is, therefore, apparent that a bull long between these points, with the power of transmitting his own characteristics, will beget daughters that, when they mature, will have long udders. The bull should also carry out straight at the tail setting, for those with dropping rumps beget daughters with the most objectionable fault, which is almost invariably accompanied by a faulty udder, with shallow, tilted front quarters. Heifers with thin thighs, well cut up behind, develop udders that are broad and well attached, and those beefy in the hind quarters necessarily sacrifice the portion of the rear udder displaced by beef. Therefore, bulls with thin thighs, free from all indications of beefiness, are to be greatly preferred.

Given masculinity, prepotency and good ancestry, the bull in whose conformation is to be found all the essential points belonging to a good cow is well worth risking at the head of the herd, but even then there are many disappointments that are difficult to account for.

After all, the real tangible proof of a bull's value is determined solely by the character of his daughters. Just what they will be is never known until after some of them have matured and shown their worth by records. This is a most excellent reason for the practice of placing at the head of the herd a bull that is old enough to have demonstrated his worth. Although not generally practiced, it is safe and sane advice to secure a bull that has produced excellent daughters, rather than a young bull whose breeding and individuality indicate that he should become the progenitor of such. If the value of bulls ranging in ages from four to eight years were more fully appreciated, fewer of the best bulls of the dairy breeds would find their routes to the shambles so early in life, and their use would greatly increase the average production of the American dairy cow.

The last and least important point to be considered in selecting a sire is his cost. The selling price of an animal never indicates his worth, it merely shows that someone is willing to pay for him. And yet thousands of dairymen and many prominent breeders consider little else. Some choose a bull because some one else has been willing to pay a high price for him or some of his immediate ancestors, while others buy a bull merely because they can secure him for a low price. Such practices are the extremes of folly, and those who follow them never advance very far in developing cows with the power of yielding largely and economically. The successful breeder or dairy farmer uses judgment, time and care to locate a bull whose breeding and individuality are sufficiently good to admit of his use in the herd. He always bears in mind that he is fortunate if he secures a bull whose daughters will be better and more productive than their mothers, for such a bull will bring him success. On the other hand, if he, through some oversight, is unfortunate, and secures a bull whose daughters prove to be poorer individuals and yield less than their mothers, his efforts are an absolute failure.

COW TESTING ASSOCIATIONS.

BY PEDER PEDERSON.

What is a cow testing association? How does it work, and does it pay to belong to one?

A cow testing association generally consists of twenty-six farmers, who virtually bind themselves together to get their cows tested, employ an expert to come around and weigh all the feed given in the form of roughage and grain, and other concentrated feeds, and put them all down at their market value; the same with the pasture, charging up against each cow all she consumes of any and all kinds of feed; then weighing the milk of each individual cow and giving her credit for all the butter-fat she produces at actual prices, as paid by the creamery to which the milk is sold. No credit is given to the cow for skim milk, only the butter-fat, as the milk is returned and used on the farm, when milk is sent, or retained at the farm where only the cream is sent. To get this testing uniform, the prices are "set" after butter-fat; if I sell my milk to private customers and get 2½ to 3 cents per pound, my cows get no more credit than butter-fat prices for the butter-fat they produce, which is the only way it is possible to get a fair average for everybody, the object being to find out exactly what cows are the most profitable and what ones are not worth keeping for milk.

There somebody may say, as they have said here in the Benson Cow Testing Association, that they do not want to have anybody else to know how poor milkers their cows are. To that I shall only say, what difference does that make? If I have a cow that is not paying me as a milk cow, she will not pay for anybody else, but it makes no difference to the butcher, as he will pay as much for a poor milker as for a good milker, and that is where the poor milkers all ought to go.

I shall now give you a few facts from the Benson Cow Testing Association, but mainly from our own herd, so you can see what we have been doing and judge for yourself if you think it has helped us anything and been worth our while to work for it. Of course, I shall have to give you the main facts from our own herd, as here I have all the details and particulars on hand, but for the Benson Cow Testing Association in full, I shall also give a few facts and figures.

RECORDS IN BENSON COW TESTING ASSOCIATION.

First year's highest cow in the association made 323 pounds of butter-fat, and a net profit of $63.50. Second year's highest cow made 418 pounds of butter-fat, and a net profit of $90.50. Third year's highest cow made 439.9 pounds of butter-fat, and a net profit of $106.30.

I shall here explain that by net profit is to be understood the amount of money left from price paid for butter-fat produced by the cow after pasture, roughage, and feed of all kinds are deducted.

Net profit is what the cow has given you for your care for her, rent on money invested in her, and rent on money invested in her share of the barn.

Three months have now passed of the fourth year, and the prospects are that we are going to smash every record held here by very large margins. The increase in butter-fat per cow in the association has been forty pounds of butter-fat for the three years past. This year the indications are for comparatively much heavier increases.

The herd record for any herd up to the present time is 285 pounds per cow for a full herd, and second herd 263 pounds, third 252 pounds. This year all these three herds will undoubtedly pass an average above 300 pounds of butter-fat, and I shall not be surprised to see five herds passing that mark. The highest cow from last year has beaten her own record for the same months last year with more than 2,000 pounds of milk and sixty-five pounds of butter-fat for the three months, and she will most likely raise the record with from 140 to 170 pounds of butter-fat for the year.

RECORDS FROM MR. PEDERSON'S HERD.

Now I shall give you facts and figures from our own herd.

The first year of the testing association I was manager for a large farm belonging in the association. The second year my oldest son and myself started farming for ourselves, and went into the association. Our cattle were mostly young, and we bought some few middle-aged cows. They were high-grade Holsteins, with one exception, a pure bred registered cow, and a pure bred registered bull. The second year we bought more pure bred Holstein-Friesian cows, and also a pure bred heifer. Each year of the two, our four poorest cows went to the butcher and were replaced with heifers we raised from the best cows.

First year, from March 1, 1911, to March, 1912, our best cow gave 7,574 pounds of milk, 270.5 pounds of butter-fat, and a net profit of $54.22; our poorest cow gave 1,976 pounds of milk, 69.9 pounds of butter-fat, and $1.56 in profit; average for the whole herd was 5,670 pounds of milk, 195.4 pounds of butter-fat, and $31.60 net profit. The highest cow paid about $2.70 for every dollar's worth of feed she consumed, and the lowest, $1.03 for every dollar's worth consumed; average for the herd, $1.75 for every dollar's value consumed. We sold the four poorest cows to the butcher, replaced them with three heifers of our own raising and a pure bred cow which we bought.

Second year, from March 1, 1912, to March, 1913, our best cow gave 11,779 pounds of milk, 439.9 pounds of butter-fat, and $106.30 in net profit (this is the highest record for this testing association, our poorest cow gave 2,723 pounds of milk, 126.4 pounds of butter-fat, $16.04 in net profit; herd average, 7,060 pounds of milk, 251.9 pounds of butter-fat, $53.96 net profit.

The net profit per cow for the whole herd the second year, as you will notice, was within 26 cents of our highest cow the first year. The best cow produced butter-fat for 10½ cents per pound, and returned $3.25 for every dollar's worth of feed consumed; poorest cow produced butter-fat for 19 cents per pound, and returned $1.65 for every dollar's worth of feed consumed. The herd, as a whole, produced butter-fat for 13 cents per pound, and returned $2.66 for every dollar's worth of feed consumed. We sold the three poorest cows and replaced them with three heifers, two of our own raising, the third being the yearling heifer bought last year (she is a pure bred).

This is the third year for us in the association. Three months passed and we are doing better than ever. Our best cow, for the three months, has given 7,584 pounds of milk, 261.0 pounds of butter-fat, and $70.30 in net profit. She has produced butter-fat for 10 cents per pound, and returned $3.50 for every dollar's worth of feed consumed. She will give close around 600 pounds of butter-fat for the year, and better than $150 in net profit. Our lowest cow has given 1,356 pounds of milk, 47.1 pounds of butter-fat, and $7.40 net profit. She has given $1.70 for every dollar's worth of feed consumed, and as she is a fine heifer, due to freshen with her second calf October 1st, she will make a good record before the end of the year. Herd average for three months, 3,388 pounds of milk, 117.0 pounds of butter-fat, and about $23.10 net profit. We expect this year to have our poorest cow give about $38 net profit, and to raise our herd average above 300 pounds of butter-fat, and $70 net profit.

GREAT BENEFITS IN CO-OPERATION.

If we had not been in the testing association, we should have been standing today but very little better than when we started. One man is pushing another along, and every time the tester is here, I always ask to look over the records in the evening. Then you can see how other people are feeding and what it cost them to produce a pound of butter-fat. It is not enough to get high producers. What counts in our pockets are high but economical producers, cows that can consume a large amount of feed, cows of capacity to transform this feed into butter-fat as economically as possible and return the largest profit. We are all after the dollars and cents, and the only way to get them out of a dairy herd is to be in a testing association. Buy your feed as cheaply as possible, which can only be done by the association buying its cottonseed meal, oil meal, alfalfa and so forth, in carload lots. Balance your ration the cheapest it can be done, feed well, and take good care of your cows. Keep exact hours, both in feeding and milking, and be kind to the cows, for they will pay it all back with better interest than any bank will give, and that kind of a cow will not go to the butcher.

Everything in this country is organized except we farmers. Start with the testing association, get better herds, earn more dollars and cents, buy your feed together. You save from $3 to $5 per ton by buying direct, and in the fall you can figure how much it takes for the winter.

Once every month this testing association has a meeting that goes from one farm to another, and we take our good wives along. The meeting is set for 11:00 a. m., and we take a picnic lunch. At 12 noon we sit down to the lunch arranged by our wives. After lunch we men go out and look over the stock while the tables are cleared, and then our wives join us; after having looked over the farm, we sit down, either in the house or outside, and talk about everything and all kinds of work on the farm. At 4:00 p. m. everybody leaves for home.

It is wonderful how much we all learn at these meetings, and how well we all get to know one another, and wonderful to find that there is not one man but who has something worth learning "up his sleeve" when you get at it right.

We farmers here in the northwest corner of Black Hawk county, together with the adjoining corners of Grundy, Butler and Bremer counties, have begun organizing. We have the Pioneer Testing Association (Black Hawk county), the Benson Testing Association (Black Hawk county, and a few in Butler county), Fredsville (Grundy, and a few in Butler county), Janesville (about half from Black Hawk and half from Bremer), and all of these testing associations are included in the Holstein-Friesian Breeders' Association, whose object is to promote the breeding of good dairy cattle and to help one another, both in buying and selling.

We have set out to make this section the greatest dairy country in Iowa, and we are going to do it too.

Now in conclusion, let me advise you to start the good work in Kossuth county. Show us that you can do as good work as we can. I am sure you are as good men. Give us a "dare" and we will accept it and run a friendly race against you to see who can do the most for the good of the farmers, socially and economically. But I warn you in advance that if you are going to equal or beat us you must pull together.

NEW DAIRY CAMPAIGNS INAUGURATED.

BY E. S. ESTEL, STATE DAIRY EXPERT.

It is a peculiar fact that those who are in greatest need of assistance to improve the conditions on their farms are generally the most reluctant to accept advice. This unfortunate circumstance does not only apply to dairying, but to every department of the farm. The men who work hardest to establish farmers' institutes, conduct short courses, and promote the organization of co-operative societies in their local communities, are in the majority of instances those who receive least benefit.

The educational department of the Iowa State Dairy Association during the year 1914 has made an effort to overcome the difficulty of reaching the non-believer in progressive dairying. This has been done by introducing some attractive and exceedingly practical features into each program. The results indicate that this method has been a great help to arouse interest among those who would not otherwise have given dairying a trial.

The special work was conducted as nearly as possible in those sections where dairying is least developed and where its introduction will be of greatest benefit in improving the agricultural conditions. The southern half of Iowa is in need of more dairying because of the condition of the soil and the relatively low income obtained with the present methods of farming used on high priced land. The mild climate, the abundance of grass, and the adaptability of the soil for the growing of milk producing feeds make the natural conditions ideal for the economical production of milk. There are but few creameries in this portion and therefore, the market for dairy products is not as well developed as in the northern portions. In order to be of the greatest assistance, a large part of the recent work has been devoted to the southern half of the state.

Up to the winter of 1913-14, the department had operated twelve dairy trains. These covered every railroad line in the state and furnished the lecturers an opportunity to reach 595 towns, forty-seven of which were given two meetings, due to the crossing of the various lines. These special campaigns which covered large areas in a limited time, served their purpose to stimulate interest and create a demand for more detailed information. In order to meet this demand, arrangements were made to hold full day meetings and give practical demonstrations with local stock in addition to the regular programs.

During the year ending November 1, 1914, representatives of the association met 268 audiences in sixty-two counties. The records of attendance show that 39,200 people were reached. Of the 268 audiences, forty-three were in attendance at farmers' institutes, eighty-nine at dairy and creamery meetings, and the remaining 136 at meetings conducted by the dairy association directly.

THE COMMUNITY DAIRY SHOW.

Community dairy shows were held in conjunction with fifty-eight meetings. These were more successful than had been anticipated and brought out an average of eighteen cows and bulls at each place. The business men at each town co-operated in making the show a success and offered attractive cash and merchandise prizes for the best animals exhibited. The dairymen and leading farmers in the communities also gave considerable of their time in encouraging their neighbors to exhibit cattle. All breeds of cattle used for milk production, whether grades or pure breds, were entered, which gave an excellent opportunity for comparison of the various types.

The shows were held in a lumber yard or livery stable which afforded the best place obtainable to stable the animals and furnish shelter for the audiences as well. The programs were opened by leading the best cows into the ring and using them to demonstrate the essential characteristics of good productive dairy type. Questions were then called for and discussions held in which all were invited to participate.

After the cow demonstration was completed, the ring was made larger or when the weather would permit all the animals were led into the streets, and the judging of the various classes begun. The animals were then placed by the judge in regard to their dairy qualities after which each was gone over carefully and its desirable and undesirable points explained.

The community Dairy Shows made it possible to reach the man milking a few cows and point out to him by the use of a member of his own herd the difference between the profitable and the unprofitable dairy cow. It was explained to him on his own basis, and he was encouraged to determine further the real value of his herd by weighing and testing the milk. Considerable friendly rivalry was created among the exhibitors which will undoubtedly lead in many instances to better feed and care in the average herd of milch cows.

INTERESTING THE CHILDREN.

In addition to the Farmers' meetings, an effort was made to reach the younger generation. The majority of the county superintendents were glad to comply with the request that the rural schools close for a day and the children be allowed to attend the meetings. It was not an uncommon sight to see a country school teacher bring all of her pupils to town in a sleigh or wagon. The students from the country and town were assembled in the high school where lectures were given on the importance of agricultural training with special reference to dairying.

At the completion of the lectures at the high school, the students accompanied by the instructors, were taken to the barn where the cattle for the community dairy shows were kept, and instruction given in judging. The cow demonstration was given first to explain the characteristics of the correct type of dairy cow. Then the boys and girls were supplied with directions and all required to compare the class of animals brought before them. After inspecting the animals for twenty minutes, the students wrote their placing together with the reasons for same, on the directions sheets and these were handed to the lecturer in charge. Discussions were then held and all questions answered.

The business men at the various towns gave prizes for the boys and girls who judged. The students generally were very much interested in the work and expressed a desire to study their agricultural work in school in a similar way. During the winter of 1914 nearly 2,000 boys and girls were reached in this manner.

WEIGHING AND TESTING THE MILK.

To be capable of judging and comparing dairy cows is important, but the only definite way to determine the value of a cow is to weigh and test her milk. It was a question as to how this could be introduced to best advantage on the average farm. The work was carried on along the Chicago, Burlington & Quincy line in southern Iowa, where the small number of dairy cattle would not permit the organization of cow testing associations. It was simply a matter of getting some one in as many families as possible started to weighing and testing the milk of the herd.

It was decided that this could be most efficiently done by inaugurating a milk record contest among the boys and girls between the ages of twelve and twenty years. These age limits were made to insure fair competition to all who entered and also to interest those who were in a position to derive the greatest benefit from the work. It was found easier and more helpful to mould the future of the boy and girl than to change the fixed habits of the father and mother.

Any boy or girl between the specified age limits who could weigh and test the milk of three or more cows for three consecutive months, was eligible to enter the contest. The contest proper closed in three months, but the contestants were all encouraged to continue the work for at least one year in order to get the entire lactation period of each cow.

A supply of monthly record sheets, feed standards, and pamphlets containing all of the necessary directions for carrying on the work, were furnished to each contestant. They were required to furnish themselves with scales and wherever possible, with Babcock testers. In case the tester could not be secured, the contestant was required to have the creamery or station man test the samples for butter-fat not less than twice each month. At the end of each month, the records were transferred to a summary sheet and the complete data mailed to the office of the association.

The manner of grading the reports was based upon the efforts put forth by the contestants, and not on the production of the cows. In addition to the reports, an essay of not to exceed 500 words describing the manner in which the work was carried on and the benefit derived therefrom was required from each contestant. Any changes which improved the rations or made the production of milk more economical, were recognized, but it was realized that the contestant had no opportunity to select the cows with which he must work.

The following score was used in grading reports:

Accuracy, 25; number of cows, 15; neatness, 20; completeness of details, 20; essay, 20; perfect score, 100.

The breeders of dairy cattle, the publishers of dairy magazines, and the manufacturers of dairy appliances assisted very materially in making the contest a success by offering the following valuable and practical prizes for furthering the dairy industry.

A year's subscription to Kimball's Dairy Farmer and Hoard's Dairyman were given by the respective publishing companies to each contestant regardless of standing.

The other prizes were:

First prize—Choice pure bred Guernsey, Jersey or Holstein bull calf.

Second prize—Choice of calves after first had been selected.

Third prize—The remaining calf after first and second had been chosen.

The Guernsey was given by Wilcox & Stubbs Co., Des Moines, Iowa; the Jersey by Shoemaker-Van Pelt-Mayne Co., Waterloo, Iowa; and the Holstein by C. A. Nelson, Waverly, Iowa.

Fourth prize—Iowa Cream Separator, by Iowa Dairy Separator Co., Waterloo, Iowa.

Fifth prize—$10 cash prize, Kimball's Dairy Farmer, Waterloo, Iowa.

Sixth prize—Milk scale and Babcock tester complete, Creamery Package Mfg. Co., Waterloo, Iowa.

Seventh prize—Perfection Babcock tester complete, J. G. Cherry Co., Cedar Rapids, Iowa.

The results of the contest are gratifying. There were 157 boys and girls who completed the work. Many of these tested more than the required number of cows, while some tested as high as fourteen during the entire contest. The reports show that the milk from 623 cows was weighed and tested for three months and that practically all of these will receive full-year records. With very few exceptions, these cows would never have been tested except for the contest and the owners deprived of the knowledge of what their herds were doing.

The prizes were awarded as follows:

First—Oren C. Leetum, Lamoni—Holstein bull calf.

Second—Albert Axelson, Red Oak—Guernsey bull calf.
Third—William Lloyd, Red Oak—Jersey bull calf.
Fourth—Carl Coffey, Humeston—Iowa Dairy separator.
Fifth—Herbert C. M. Gass, Moulton—$10 in cash.
Sixth—Latham Heskett, Promise City—Babcock tester and milk scale.
Seventh—Miss Dorcas Manchester, Davis City—Babcock tester.

It was a fortunate circumstance that the winners of the bull calves all received their choice of breed. Mr. Leetum preferred the Holstein. Mr. Axelson, the Guernsey, and Mr. Lloyd, the Jersey. Information contained in the essays of all those winning prizes indicate that the calves, as well as the other prizes, will be used to build up the herds represented.

The results of the contest show that the 623 cows produced an average of 404 pounds of milk and 19.6 pounds of butter-fat per month or 13.5 pounds of milk and .65 pounds of fat per day. The average milking period as tabulated on the reports, is eight and one-half months, which makes an average of 3,434 pounds of milk and 166.6 pounds of butter-fat per year. The average cost of feed per month was $4.50 per cow. This included dry feed two months and pasture one month. The cost of producing 100 pounds of milk averaged $1.11, and of producing one pound of butter-fat twenty-three cents.

The average price received for butter-fat which was sold for the manufacture of butter was 23.5 cents per pound. This shows a profit of only one-half cent per pound for the butter-fat if the skim-milk and manure are allowed to balance the cost of labor, interest and depreciation. The average price received for butter-fat used in ice cream making, was thirty-eight cents which shows the advantage in selling sweet cream for this purpose.

The relatively low price of butter-fat, as shown by the reports of the contestants, is due mainly to the lack of local markets. During the same months, the price received for butter-fat in the northern half of the state, was twenty-eight cents per pound. The high cost of production is accounted for by the unbalanced rations fed. Of the 157 herds in the contest, thirty-two were receiving silage, twenty-nine alfalfa hay, and only eighteen a combination of these two feeds. The amount of cottonseed meal, oil meal and bran fed was small and limited to only a few herds. The principal ration used consisted of corn and oats, mixed hay, and corn fodder.

The results of the milk record contest show the conditions as found in the average small herd of milch cows in southern Iowa. They emphasize the importance of getting the farmer, who milks a few cows, interested in his herd. They also indicate the part these herds play in lowering the production of the Iowa cow.

ABSTRACT OF REPORT FOR YEAR 1914-15.

During the past year representatives of the Iowa State Dairy Association have addressed 281 audiences. By means of special trains, creamery meetings, farmers' institutes and other gatherings, the association has reached 45,000 farmers and dairymen.

Two special dairy trains were operated during the months of January and February, 1915. Each trip was three and one-half weeks in length. The lines of the Chicago Great Western, the Chicago, Milwaukee & St. Paul, and the Waterloo, Cedar Falls & Northern were covered. In each case the railroad companies furnished the equipment absolutely free of charge to the Association.

These trains were operated in a similar manner to the one described over the Burlington. Half day and full day meetings were held at each town. In addition to the regular lecture work, community dairy shows, boys' and girls' judging contests, milk record contests, etc., were conducted. More extensive exhibit cars were carried on these trains than on any previous campaigns.

The calls from the farmers' institutes for speakers were more numerous this year than heretofore. Twenty-one institutes were attended and a large number of requests could not be accepted, because of the other work which was being carried on at the same time.

Several dairy short courses were also conducted. These were in the older dairy communities where detailed information was required. These were three days in length and instruction in breeding, feeding, testing, dairy cattle judging, etc., was given. Although the special dairy short course was new, the attendance was very good at each of these conducted.

The creamery picnic during the summer months has become very popular, and a larger number of these were held during the past year than ever before. Such gatherings are an excellent means of bringing the patrons together in a social way as well as to hear the practical discussion of subjects essential to the improvement of conditions on the farm.

During the spring and fall months when the work is urgent on the farm and it is therefore difficult to hold meetings, bulletins are sent to the local newspapers. These contain timely suggestions which assist the farmer in solving the problems which confront him with reference to his dairy herd. They are written with the idea of assisting the creameries in improving the quantity and quality of raw product. The newspapers are lending their assistance by giving the information a prominent place in their columns.

One of the most important features of the work has been the establishment of a great dairy show in conjunction with the annual convention. This year the show was unsurpassed by any similar event. It brings dairy cattle breeders with their choice animals from every part of the United States and offers the farmers of not only Iowa, but the Mississippi Valley an opportunity to become acquainted with the various breeds. Premiums are offered for butter, cheese, and milk which, in addition to the display of dairy appliances and farm implements, bring thousands of prosperous farmers. The convention proper is held in a building on the grounds, and subjects of interest to the buttermakers, creamerymen and dairymen are discussed by authorities of national reputation.

The Iowa State Dairy Association in all of its work has been assisted in a large measure by the other dairy interests of the State. Chief among these is the Dairy and Food Department which had a number of speakers on the trains throughout the tours and also co-operated in all the other work. The individual dairymen have also sacrificed portions of their time to educating their brother farmers in better methods and giving them the benefit of valuable experience. The Dairy Department of Iowa State College and the State Veterinary Department have also given a great deal of assistance from time to time.

ORGANIZING CO-OPERATIVE CREAMERIES.

BY G. M. LAMBERT.

There are very few dairy districts in the United States that have not, at some time or other, been interested in operating or in organizing a co-operative creamery. The idea the average small dairyman first possesses is that the co-operative creamery will pay him considerably more for his product than he has been able to get elsewhere. Almost every state in the Union can furnish, as examples of failures, the wrecks of co-operative efforts along this line. Now, these failures are not all due to the same cause. Nevertheless, regardless of the cause, they stand as monuments to failure, and, as such, they should be useful as a source of information.

Briefly stated, the history of a nation is merely the biography of its great men; and, the history of an industry is the life story of its successful men. Education plays a most influential part in the changes which take place in the methods of doing business. The true way for a man to be practical is to take advantage of his own knowledge and all the knowledge of other men that he can absorb. The time has come when the truth about dairying can not easily be covered up, nor that which is falsely pretended. The growth of the dairy industry demands that all dealings must be based upon an honest understanding between contracting parties.

WHY CREAMERIES FAIL.

Now, I shall not attempt to assign a reason why all those creameries are closed. Instead, I shall simply enumerate and again repeat a few of the things that are commonly known to cause creameries to fail. Among these are the lack of sufficient number of cows to furnish the desired amount of cream, poor organization, lack of proper co-operative spirit, poor management and poor markets.

To any mind there is but one word which exemplifies creamery success. That one word is "efficiency." Modern philosophy teaches that nothing is important that does not have a work to do. If a creamery has a work to do, and exercises efficiency in doing it, it fulfills its mission. Otherwise, it will, in time, give way to one that is efficient. At the present time, a creamery may possess the strongest possible organization, but, if its management, through a feeling of confidence, will lack vigilance and neglect the smallest details, that creamery will gradually fall below its high standard and, perhaps, fail. The finest machine made will go wrong, and perhaps stop altogether, if something gets into its cogs; so it is with the strongest creameries—when the cogs are blocked, trouble ensues.

We know that many farmers are following improved methods of cultivation in order that they may receive larger crops; they are feeding their cows more and better feeds and housing them more comfortably so that they will produce a greater quantity of milk. They know that by feeding their own crops to the dairy cow, they can retail their grain and hay, in the form of butter-fat, to much better advantage than if they were sold in the raw stage. What are these farmers doing when they follow such methods? In short, they are co-operating with the soil, and with the cow; perhaps not consciously, but, nevertheless, co-operating. They are co-operating in this way because they are gaining in efficiency and because they are securing greater returns.

MARKETING OF BUTTER VITALLY IMPORTANT.

It is with the idea of receiving greater returns and more satisfactory results that the majority of co-operative creameries are organized. Now, when any new organization attempts to put its butter upon the market it finds itself in the same position as any individual would find if he would attempt to market his own product direct. In other words, the creamery meets the competition of all the other butter on the market. And here let me say that I firmly believe the marketing of butter is one of the most important, yet one of the most neglected, phases of the creamery business. I further believe that next to the lack of sufficient cows, more creameries have failed on account of their poor markets than any other reason. If a co-operative creamery proves successful, it should be able to pay its patrons at least several cents premium per pound of butter-fat; and that's what every successful creamery should strive to do, pay a premium for first class goods. A creamery cannot succeed, in the broad sense, when its patrons make use of it merely in a mechanical way in disposing of their butter-fat. No creamery can hope to be successful that does not have the thorough co-operation of its patrons in producing a good quality of cream to make good butter. It requires good butter to find good markets. It requires good markets to obtain good prices. It requires good prices to encourage good dairying.

Candy machines, weighing machines and telephones are supposed to render a certain service according to the amount of money deposited in them. If the machine is out of order, the individual has no recourse; and so the mechanical dairyman, who delivers his butter-fat to a simple mechanical factory, has no recourse when trouble arises.

So now, as I see it, the big thing is to get down to the individual. Meet trouble before it starts. Before a man can become a strong co-operator, he first must be a strong individual. The trouble with most co-operative creameries is that they begin at the wrong end. They spend a large sum of money in organizing and building a factory before they really know what they are going to do. If the desired number of cows are pledged, they are usually encouraged to go ahead. The theory is that the profits are very large, and that they will be pro rated accordingly. Little thought is given to the selling end of the business, or to the outside competition. In practice, this system has worked out badly in a large number of cases. Then, after all, who is to blame for the many failures that have been and still are being made? I answer, the state.

STATE SHOULD PROTECT INVESTORS.

Dairying must be considered as one of the state's greatest resources, and, as such, it must be protected in the same manner and degree as are other state industries and enterprises. Think of the hundreds and thousands of dollars that have been wasted and lost in the abandoned creameries. They stand as a disgrace to the locality and state in which they are allowed to rot down. In my Western work I am meeting large numbers of men who have moved away from the Middle West. Many of these men relate to me their experience with such creameries and tell of the money they have lost, and of the hardships and discouragements they endured. At present, their faith in dairying, especially in creameries, is very small. Now, I believe there is a remedy for this condition.

We are all interested in dairying, and I take it for granted that associations are organized for the promotion of a better feeling and a better understanding between us. We gather from several different states, because of our faith in the continued usefulness and ultimate triumph of better dairying. Associations were founded because men have learned the practical values of closer association with one another. We know that by promoting good fellowship and unselfishness we have much to gain and little to lose. We know that ruinous competition and creamery failures go hand in hand. We have learned that judicious organization and true co-operation between dairymen and factorymen mean success. By helping one another we will all sooner attain the desires of each. And what is the first step? Knowledge.

The man who wants to invest in a co-operative creamery must have knowledge, and the right kind of knowledge. And the associations, and we, as individuals, and the dairy press, must be the source of this knowledge.

I believe that the state of Montana has taken a great step forward in the way of protecting its dairymen, and it is the duty of every state to protect its people. Montana has vested the authority in the state dairy commissioner to say when a new creamery shall be started in that state. Consequently, I predict few creamery failures. Before a creamery can start, a solid foundation must be laid. As the foundation is being laid, the dairymen are being supplied with useful information. That is a great work—a work that all our states should take up.

Now, in closing I wish to say that my idea in regard to the "Essentials in Organizing Co-Operative Creameries" is: Assist the dairyman first, place useful information at his disposal, and encourage him to be a strong individual. After he has become a strong individual, he will be only too eager to co-operate. By that time he will understand the true fundamentals of co-operation and will realize when and how to organize a co-operative creamery.

THE DAIRY BARN.

One of the first requisites for successful dairying is a barn adapted to the purpose. In building the dairy barn in Iowa, it must be remembered that it is to be the home of hard working animals for about six months of the year. The dairy cow, in order to produce milk economically, must be kept under the best conditions possible. She is a mother once each year, and, therefore, in order to produce large quantities of milk between these periods, she must not be subject to adverse conditions.

In choosing the site for the dairy barn, we should have in mind a warm, well-drained place. It is best to construct it on slightly sloping ground, so that the surface water will drain off readily and not cause mud holes around the barn doors. The well-drained site also furnishes a drier atmosphere for the animals, which is very desirable in the winter time.

In building the dairy barn, there are four essentials which should receive prime consideration, namely: Light, sunshine, warmth and ventilation. At present there are many so-called "basement dairy barns." Although some of these are furnishing the quarters for our best herds, yet they are undesirable. The barn which is partly buried in the earth does not have dry walls, and the air is damp, due to the lack of sunlight. It is always advisable to have the dairy barn constructed on a good foundation and have the cows on the surface floor.

There are many types of barns being constructed. Some of them have double rows of cows, some single and some triple. It matters little as to the arrangement, provided it is handy and that it has some system of furnishing plenty of fresh air and an abundance of light. It should not open into a horse barn, and is preferably built separate from the other buildings.

The size of the barn depends entirely on the size of the herd. As a general rule, it should not be too high, so that the animal heat of the cows will be lost on cold days in winter. Most barns built now are sealed about eight feet from the floor, which makes less space to heat and, at the same time, furnishes the necessary volume of air for each animal, if the ventilation is installed properly. The floor should be constructed so that it will drain readily and dry quickly. Cement is rapidly taking the place of wood for barn floors. It costs very little more than plank and will wear much longer. If cement is used it should have the rough finish, which will avoid injury to the animals when the floor is damp.

The average double-row barn should be thirty-two feet wide. In the barn where the cows face outward this allows four feet on either side for feed alleys. Two feet for each manger, four feet six inches for the standing platforms, fourteen to sixteen inches for gutters and seven feet for the alleys between the cows. The feed troughs and alleys should be so constructed of cement, which affords an easy means of cleaning the barn.

The fixtures should be as simple as possible and should, preferably, be constructed of iron. The patent stanchions and stalls furnish a strong and simple means of keeping the cows in place. The swinging stanchions, fastened at the top and bottom by several links of chain, are very comfortable for the animals. Sloping partitions reaching within a foot of the drop should separate the cows. This prevents injuries to udders and teats by cows stepping on each other. The stalls should be three and one-half feet wide, which gives plenty of room for the average cow.

It is very seldom that the dairy barn requires artificial heat. If the barn has siding on the outside and paper and ceiling boards on the inside, it furnishes an air-tight wall. The barn is heated by the animals to a temperature of about fifty degrees, which is about the correct temperature.

Large production is always accompanied by a good circulatory system. In order to have a vigorous flow of blood, the cow must have plenty of fresh air to purify her blood. It is, therefore, very essential to have some means of supplying fresh air. Very little attention has been paid to this in the past, which is one of the reasons why the milch cows go into pasture in the spring in a weak condition. They are kept in the barn and compelled to breathe foul air over and over again, and if any of the cows are diseased the others are under conditions to contract it very readily.

All systems of ventilation are based on the fact that cold air is heavier than warm. The King system is used most extensively. It admits pure air by means of ducts, without creating a draught, and draws off the impure air by means of outlets. Another means of furnishing fresh air is by admitting it through swinging windows and drawing off the impure air by means of several ventilators.

Light, the third important factor, should be furnished in abundance. It is the greatest disinfectant we have, and as germ life is very antagonistic to both milk and animals, the importance of light is evident. Each cow should have six square feet of window space. Glass is little more expensive than wood and should be used freely in building the barn.

I have thus far spoken only of the new dairy barn. There are a large number of barns already built that could be greatly improved with little expense. A ventilating system could be installed without materially changing the barn, and windows could be sawed between the ones that are already there. By making a few simple changes, the old barn can be transformed into a comfortable home for the dairy cow.

EFFICIENCY IMPORTANT.

The farm, and especially the dairy farm, if it is to be made a success, must be operated on the same basis as our factories. In fact, the farm is a factory, and every animal on it a machine placed there for the specific purpose of making a substantial profit over and above the cost of maintenance and labor. As in the manufacturer's plant, the machines on the farm should be put to a rigid test, and if they fall below a certain standard they should be disposed of at once and replaced with those having greater efficiency.

The successful beef raiser is the man who has studied the conditions of the feed lot thoroughly. He is the man who feeds the animal best fitted for the economical manufacture of beef. The hogs which are a source of profit to their owners are those highly bred animals that are especially adapted for pork production. Likewise, the dairy cow, if she is to be a profit-maker, must be a special purpose animal bred for the specific purpose of converting the grains and grasses of the farm into the finished products of milk and butter-fat at a minimum cost.

Why is it that the average production of the so-called dairy cow is so low and that two-thirds of the cows in the Middle West are kept at a loss? The only answer is that they are the wrong kind of machine for the place they are supposed to fill. Of course, the present type of dairy cow cannot be abolished at once. It would be foolish, indeed, to advocate that all the cows milked on the average farm should be disposed of and others secured to take their places. This great change from unprofitable to profitable cows must take place gradually and in a manner that will involve the smallest expense.

The only logical method of securing better dairy cattle is through the pure bred sire. The cows should be subjected to a fair test and all those producing a profit kept on the farm as the foundation for the future dairy herd. These cows should be bred to a pure bred sire chosen from one of the milking breeds. When the first cross calves arrive, they will have fifty per cent of the sire's blood, and, if he is a good individual, the daughters should be greater producers than their mothers. The first generation should again be crossed with pure bred blood of the same breed, thus making the resulting calves seventy-five per cent pure bred. By following this system of breeding, and by careful selection, the average herd can be built up at a remarkable rate.

The writer has in mind a certain farmer located in central Iowa, who, six years ago, had a herd of twelve cows, nine of which were losing him from $2 to $12 annually, and the remaining three returning an average profit of $22. After determining the condition of his herd, the nine boarders were sold and the three returning a profit bred to a pure bred Holstein bull, which was purchased at a cost of $95 when a yearling. The bull proved very prepotent, and the owner, encouraged by the marked improvement of the daughters over their mothers, has continued to breed up, until the second generation is producing an average of 220 pounds of fat, an increase of sixty pounds over the production of their grandmothers. This man sees the necessity of having the most efficient machine in the proper place. He is on a farm similar to yours. Try his plan of making the farm a factory and every animal on it a profitable machine.

SOURCES OF IMPURE MILK.

The problem of raising the quality of butter in the creameries of Iowa is one which concerns the farmers to a great extent. This is especially true in the co-operative creameries where an increase in price means a direct return to the stockholders. In many instances we find the buttermaker held responsible for the poor class of butter, while in reality he is caring for the cream in the best possible manner after it arrives at the plant. This false accusation has led many good operators to leave the creameries and seek employment at other places.

The real source of the undesirable odors and flavors in butter is on the farm. In many instances the farmers are entirely unaware of the conditions under which they are producing milk. They fail to consider how every other food product is produced compared to the average farm. If we would visit a candy factory and see the maker mixing candy in a tub surrounded by manure and a loose ceiling, through which the dust could sift and drop into the candy, we would immediately denounce the product as unfit for consumption, while milk and cream produced under the same conditions is used to drink without a thought to its contamination.

Milk is one of the best foods we have, if it is clean; but it is one of the poorest foods if not cared for properly. When drawn from the cow, it is at a temperature of about 85° F., which is very favorable for the growth and multiplication of bacteria that are the cause of practically all of the odors found in cream and butter. The common ropy, bitter and undesirable acid fermentations found in cream are due to these little organisms. They multiply at a rapid rate, and, therefore, if only a few enter today there will be millions tomorrow.

The first source of poor cream is the pasture containing sloughs or creeks. During the summer months when the cows are molested by the flies they gather in these sloughs and, as a result, collect a great deal of the slime and mud, which is shaken off when milking takes place. Again, in the spring, when the frost begins to come out of the ground, the lots are generally muddy and filled with manure. If the cows are milked without being curried the milk pail again receives a contribution of filth.

The second great source of poor cream is the unsanitary barn. If we would visit all the barns of Iowa where cows are kept we would find that only a few of them could be classed as dairy barns at all. As a rule, the cow is placed wherever there is room, regardless of ventilation or light. The quality of cream could be greatly improved if the barns had tight ceilings, more windows and tight, well-drained floors.

In many of the barns the ceilings are not tight. If there is a storage space above for hay or straw, the dust drops through and into the open milk can below. The floor should be tight and, preferably, constructed of cement, which will not admit the wet manure to be absorbed.

Light, one of the greatest disinfectants known, is almost entirely ignored in most barns. We only have about one-third as many windows in our barns as we need. At the present high price of lumber we can buy glass as cheap as wood, which eliminates an extra expense. If the barn has an abundance of light, the floors will be dried and the air will be more healthful for the animals.

The dairy barn should not contain anything but the necessary fixtures, such as stanchions, troughs, carriers, etc. If machinery is stored in the barn, it furnishes a place for the collection of dust and makes it difficult to properly clean the floor and walls. A coat of whitewash three or four times a year will also aid in keeping the barn clean and will add greatly to the appearance of the interior.

Some system of ventilation should also be provided. There are many barns being constructed without a thought of pure air and its value in producing clean milk, to say nothing of its helpful effect on the health of the cows. Milk absorbs odors very readily and, therefore, if the air is foul we should not be surprised to find the buttermaker criticize it for having barn odors.

Let us consider briefly the cow herself, and determine wherein better care adds to cleanliness as well as to her comfort. The horses are curried every day, whether they are used or not, but the cow, which often gets much dirtier, never sees a curry comb. There are many instances where the cow goes to pasture in the spring with the entire rear end of her body soaked with manure. When this avalanche of filth finally comes loose, it takes all but the skin with it. Cows kept in this condition and milked twice each day cannot produce clean milk. During the operation of milking the filth is shaken into the pail and furnishes a source for the spread of disease among the consumers.

Another great source of impure milk is the neglected hand separators in horse barns and cow barns. In many instances the hand separator is condemned, but it is folly to blame a machine constructed of cast iron and steel for lowering the quality of cream. It is the improper care that causes a separator to turn out poor cream. Although the machine is kept perfectly clean, yet, if stationed in the barn, the cream as it comes from the machine is exposed to an atmosphere contaminated with dust. Wisconsin has a law which makes it a crime for anyone to keep the separator in the barn. Iowa would do well to follow in the footsteps of her neighbor.

When the milk comes from the cow it is absolutely pure, but the contamination starts from the time it leaves the teat until placed in the vat at the creamery and cooled. If the cows are on pasture there is less liability of dirt entering the milk during the summer than during the winter. However, care should be taken in brushing off the dirt and dust from the udder, and the milker's hands should be clean. The milk should be run through the cream separator as soon as possible after it has been drawn. It should be removed from the barn and taken directly to the cream separator and skimmed.

When the milk is drawn it has a temperature which is just right for the development of bacteria. If it is allowed to stand around the barn the bacteria will develop rapidly and thus make it much more difficult to produce sweet cream. The cream should be taken from the separator and cooled at once. This can be most easily done by placing the cans in a small tank of water. The average well water has a temperature of about 50.° This, when pumped directly into the small tank, which has an outlet into a large stock tank, offers the most practical means of cooling the cream on the average farm. The tank may be constructed of either wood, steel or cement.

Shot-gun cans offer the best means of cooling cream, because of their small diameter and the amount of surface exposed to the water, in comparison with the amount of cream contained. The cream will cool much quicker if it is stirred at intervals of one-half hour after it has been skimmed.

The cream separator, as well as the milk utensils used, should all be thoroughly washed with a brush. A brush is much preferred to a rag, because of the bristles getting into the cracks and crevices and cleaning the pails and cans thoroughly. After washing, the utensils should be scalded and then placed in the air to dry. Cans and pails should be inverted, but should not have the tops closely against the table. Pegs fastened into the wall are a very good means of airing the milk cans.

One of the most important features in producing clean milk is the covered milk pail. This is simply an ordinary pail with the top partly covered, in order to prevent the dirt which drops from the cow entering the pail. These pails are little more expensive than the ordinary open pail and practical use shows that they are very desirable for the average farm.

Those who are producing the best grade of cream have constructed small milk houses. These are inexpensive and are located near the pump. The cooling tank, as well as the cream separator, are placed in them, thus concentrating the work and making it easier to care properly for the cream.

Every farmer will be well repaid for constructing a small tank and handling his cream in a sanitary manner. The premium on sweet cream will continue to increase and the price will more than repay for the expense of the equipment and the trouble of giving the products good care.

BENEFITS OF THE CREAMERY.

How to keep the small town prosperous is a problem that should interest every citizen. This is particularly true in the Mississippi valley, where there are numerous villages ranging in population from 200 to 1,000. These towns are essential because they furnish a trading place for the farmers in close proximity to their homes. Each is the center of the business and social activities of a community.

A town less than 1,000 in population is seldom located on more than one railroad, and as a result the shipping facilities are not adequate to justify a large manufacturing plant locating in it. Thus the prosperity and financial support of every institution in the town depends entirely upon local capital. One of the most remunerative factories for the small town is the creamery. This is true because it does not necessitate products being shipped from a great distance and it secures its supply of raw material entirely from the surrounding community.

Although the creamery does not employ a large number of men, it makes the town prosperous because of the comparatively large returns it brings to the community for the capital invested. The average plant in Iowa has been built at a cost not to exceed $5,000, and according to the dairy commissioner's report for 1910, the average annual business of the Iowa creamery has been $61,852. Thus, it can be readily understood that a large business is operated on an exceedingly small amount of money.

The average creamery in Iowa during the past fiscal year has manufactured 206,173.9 pounds of butter. If we value this at 30 cents per pound, it means that each creamery has sold $61,852.17 worth of butter Only 8,481,940 pounds of the entire product was consumed in the state. Therefore, over 90 per cent of the money paid to patrons came from the large cities of the East. This not only makes a large business for the local banks, but assists materially in an even distribution of money at all times.

In the community that has no creamery and where the products of the cow are only used to pay the grocery and meat bills each month, the supply of currency is more spasmodic. The farmer who raises grain and disposes of it directly to the elevator, receives his money only during the marketing season. The extensive beef and hog raiser likewise receives compensation for his stock only once or twice a year when the animals are marketed. This system brings large quantities of money to the bank at certain seasons.

The small institution, in order to make a profit on its deposits, is forced to send the money to other localities where it can be disposed of at a profitable rate of interest to the large business houses and manufacturing plants of the cities. By doing this the money which originates in the small town and which rightfully should be used for the purpose of upbuilding the local community is used for assisting business in other states.

The farmers' co-operative creamery is especially valuable for building up the town as well as the surrounding community, because it brings heavy deposits to the bank at frequent intervals, as well as a check to each patron once a month. This supplies ready cash for the living expenses of the farmer, which, in turn, makes it possible for the merchants to conduct a cash business.

A creamery in the community is also a means of bringing the merchants and farmers into closer contact. It intensifies their business relations and is a mutual benefit to the surrounding farmers, as well as to every business man in the town in which it is located.

PART VIII

Extracts From the State Bee Keeper's Report

By **FRANK C. PELLETT**, State Bee Inspector

The year 1914 has not been a favorable one for honey production in Iowa. The drouth of 1913, followed by a similar one this year was responsible for a failure of the white clover, which is the principal source of nectar secretion. The dearth of honey during the best part of the summer has made conditions favorable for the spread of bee diseases, and the bee keepers have not only had to face a short honey crop but in many localities have had to combat foul brood as well. Both American foul brood and European foul brood have been reported from many localities the past season. European foul brood has been especially prevalent and has made its appearance in all parts of the state. It is now present in several counties where it has never been known previously. Indications are that within a short period it will have spread into every county of Iowa and that the bee keeper of the future must be prepared to deal intelligently with disease or quit the business. In localities where disease is present, the inspector frequently finds a lot of empty hives but no bees, on the premises of the careless apiarist. Hundreds of farmers are thus involuntarily quitting the bee keeping end of their business. Bee diseases are not an unmixed evil for they compel better attention. Many a careless bee keeper has found it necessary to study his business more carefully or lose his property, with the result that better attention has increased the return from his apiary. Some of the most successful honey producers of the writer's acquaintance say that they never made any money from their bees until they were compelled to fight foul brood. On the average farm the bees are the last thing to receive any attention. Too many men are content to leave the bees to shift for themselves as best they may and if there is a surplus of honey in the fall they regard it as so much velvet. Foul brood is rapidly removing such apiaries from disgracing their owners. Unfortunately, however, while they are being

Demonstration work in Coverdale Apiary at Delmar.

thus removed the disease is too often carried to the apiary of the most careful bee keepers who are compelled to fight the disease, perhaps for years, at great loss. Seldom a man passes through an epidemic of foul brood and remains in the business but he becomes a thorough-going bee keeper. In spite of the unfavorable conditions of the season there is much interest manifested in the business of honey production and many beginners are taking it up.

NEW PUBLICATIONS.

So many inquiries reached this office early in the season, as to where books and papers on bee keeping can be secured that we were compelled to issue a bulletin containing this information in order to reduce the necessary correspondence and at the same time give the desired information in sufficiently comprehensive form. This bulletin seems to fill a decided need and the small edition printed is nearly exhausted. (Bulletin No. 2, "Bee Keeper's Library.")

At the request of Prof. Kennedy, then head of the extension department of the Iowa Agricultural College, the writer prepared manuscript for a bulletin on wintering bees which was issued by the extension department of the college and is being distributed from Ames.

The demand for information concerning brood diseases has been so great that the supply of the second annual report was reduced to a few hundred copies by the middle of the summer. In order to retain a supply of this report for future use a brief bulletin on "Brood Diseases of Bees" was issued from this office in July. This bulletin is placed in the hands of each bee keeper visited by the inspector and it is also mailed on request from the office. (Bulletin No. 3, "Brood Diseases of Bees.")

NEED OF EDUCATION.

It is becoming more and more apparent that the problem of bee diseases is largely one of educating the mass of bee keepers to an understanding of the nature and treatment of the two forms of foul brood. Professional bee keepers readily recognize that something is wrong as soon as disease appears among their colonies. Such need only to have a sample examined to inform them which kind of disease is present and they are then able to give the matter prompt and efficient attention. It has frequently

happened that disease has promptly been stamped out on its first appearance in an apiary whose owner was alert. With the rank and file of people who only have a few colonies there is no suspicion of anything wrong until the bees are dead and their honey carried away by visiting bees and the disease thus spread far and wide. When the inspector is called into a neighborhood to examine bees in such cases, he is almost sure to be informed that the particular bees which he may wish to examine are all right. Yet in most cases their owners have never examined the brood nest and would be unable to recognize diseased brood if they saw it. The fortunate visit of an inspector has located many cases of disease in apiaries of this kind where but for his coming the disease would have surely been spread to surrounding apiaries. In one case the inspector called at a farm house where he was advised that there were bees. The housewife informed him that they had no bees but some empty hives. An examination of the hives disclosed the fact that bees had died of American foul brood, yet the combs and honey were still in the hive. It was in early spring and fortunately it had not been found by the bees from neighboring apiaries. The owner was in the field and when visited by the inspector and informed of the condition promised to burn the whole outfit when he went in at noon. The inspector would have much preferred to do the job himself but the owner insisted that it would be promptly attended to. A man was sent back the following day to see that instructions had been carefully followed, only to find that the hive had been carefully disinfected by burning out the inside, but the honey was left lying on the ground, where it was much more likely to be found by bees than had it been left in the hives. As far as the hive was concerned it had been effectively cleaned of the disease but the owner had failed to grasp the fact that the disease is carried from hive to hive in the honey. Very fortunately a large apiary near at hand was saved from infection by the opportune visit of the inspector.

MOVING PICTURES.

It early became apparent that with the funds available but little progress could be made by personal visitation as seems to be contemplated by the law. With the consent of the executive council a moving picture film of nearly one thousand feet in

First summer meeting at McGregor, Iowa, June, 1914.

length was secured. This film shows the modern methods of apiary management and is a revelation to many who have had bees on their premises for many years. Unfortunately the film is too short to give all the information that is to be desired. One can get an idea from the moving picture at a glance which would not be fully made clear by pages of reading. The film has been sent out to institutes, schools, churches and anywhere else where public meetings discussing agricultural questions were being held. Those using the film have been required to pay the express, thus relieving the department at the expense of keeping it in use.

The agricultural college very generously gave the department the privilege of showing this film at the close of their picture program in the college building at the state fair twice each day. Mr. Colburn who operated the machine for showing the college pictures also showed our film, thus relieving the department of expense of operation.

Group at Clarinda.

The officials of the agricultural college have shown themselves uniformly courteous and have assisted this department in every possible way in carrying on the work of the year.

SUMMER MEETINGS.

At the 1913 convention of the Bee Keepers' Association arrangements were made to co-operate with the inspector in various ways. Among other things planned was a series of summer meetings at convenient places over the state. Eight in all of these meetings were held. Six were well attended and the day very profitably spent in discussing not only bee diseases but other subjects of timely interest relating to bee keeping. Several conditions conspired to interfere with the success of the other two meetings.

The Iowa Bee Keepers' Association is lending every possible aid to the inspector in his work. At some points branch associations have been organized locally for the express purpose of assisting in the work of checking brood diseases among the bees. The Polk County Bee Keeper's club is one of the most active.

At Sioux City the bee keepers are also very energetic and when the writer was called to that city, more than twenty-five came together with but a few hours notice to discuss ways and means of assisting in inspection of the apiaries in and around the city. In such a location the inspector would be helpless without the aid of some one well acquainted with the locality to assist in finding the bee keepers. At Sioux City the bee keepers offered their services freely in acting as guides and assistants and also furnished transportation by placing their teams and automobiles at the service of the inspector without charge. Mr. Aldrich, the deputy for the northwestern district, did most of the work there and his expense account was lightened by probably fifty dollars

After dinner group of beekeepers at Hall apiary.

by the generosity of the local bee men. The same condition has prevailed to a greater or less extent all over the state and it would have been otherwise impossible to have reached so many apiaries without a much greater expenditure of funds.

UNFAVORABLE CONDITIONS.

The conditions that have favored the spread of disease have made it extremely difficult for the inspectors to work. The fact that no honey was being brought to the hive during much of the summer made it very easy to start robbing and it very frequently happened that an inspector would only get nicely started to work when such conditions would compel him to stop. At such a time an inspector had much better be at home for he can easily spread disease instead of checking it.

The protracted illness and death of the father of Prof. Bartholomew, who was working in the northeastern district, interfered with his work greatly and prevented him from finishing some much needed inspection. Taken altogether it has been a trying year for the inspectors. The unexpected appearance of disease in so many new localities has made an unprecedented demand for assistance and the unfavorable nectar secretion has made it impossible to reach nearly all of them or to do really satisfactory work in many of the localities visited.

NEED OF COUNTY INSPECTORS.

A season like the present one when conditions that favor the spread of disease make it impossible for the inspectors to make rapid progress in dealing with it make it very clear that in order to get effective inspection a considerable number of men must be available for work at the time when conditions permit good work to be done. I am doubtful whether with a large appropriation it would be possible to get a sufficient number of competent men for the short period that they can be thus employed. Then, too, it is often necessary to travel long distances and considerable expense is necessary. It seems to me that provisions should be made for cases where disease is badly scattered in any county, to authorize the county boards of supervisors to appoint a competent resident bee keeper as county inspector on petition of about ten resident bee keepers and the recommendation of the State Inspector. In this way a man would be able to work with little expense beside his time and the total amount necessary to do the work in any one county in any one year would be so small as hardly to be considered. Being on the ground the county inspector could do his work at the most favorable time and his local acquaintance would greatly facilitate his work. There are at present about ten counties where such a county inspector should be at work during the coming summer. The small expense necessary will be returned a hundred fold in the increased honey production of the state. During the past summer the department has tried the experiment of appointing one deputy with no work outside his home county. Mr. L. W. Elmore, a bee keeper of Fairfield, has had charge of the work in Jefferson county. Because of the fact that he was not compelled to leave his work half finished to rush off to some other quarter to meet insistent demands he has perhaps made more real progress than we have been able to do in other sections. With efficient county inspectors in counties where disease is badly spread, and the state department to look after localities where there is not so much to be done, and to have a general supervision of the work, there is hope that foul brood can be reduced to a point where it will no longer be a serious menace to the bee keeping interests of Iowa. This plan will not only be the most effective, but by far the cheapest plan that at present seems possible.

Demonstration work in the Hall apiary at Colo.

CHANGES IN THE LAW.

Without a very much larger appropriation than is now available, it would be impossible to follow the law as it now stands. This being the case the department has been compelled to follow it only as far as funds will permit. Section 2, of chapter 169, requires the inspector to examine such apiaries as are reported to be diseased and all apiaries in that locality. This should be changed to leave the matter a little more to the best judgment of the inspector. In some such localities are bee keepers who have extensive apiaries that would require several days of an inspector's time to examine thoroughly. These same bee keepers may understand the treatment of disease fully and may be able and anxious to find it on its first appearance. For an inspector to spend a week in such an apiary would be a useless expense. Then the same section requires the inspector to make a second visit to these same apiaries. Experience shows that this is not always necessary. In fact only occasionally is it necessary for the inspector to go to the expense of a second visit. This should also be left to the discretion of the inspector.

IMPORTANCE OF THE INDUSTRY.

Quite frequently one can hear the total production of the poultry and bees compared, to the disparagement of the bee keeping industry. Such persons seem to forget that 75 per cent of the total figures represented by the product of the poultry yard have already been counted as corn, wheat or other grain which had been fed to the poultry to produce the product, while with the honey produced we have a net resource. The bees gather the nectar from which the honey is produced direct from the flowers and if it were not so used it would be lost. The few millions that honey adds yearly to Iowa's production is a net addition to her wealth. The expenditure for hives and fixtures can be compared to the investment in poultry houses and fences which are not deducted in considering the returns. This is rather an investment than an expense and is good for many years.

The presence of large numbers of bees also greatly increases the production of fruits and seeds of many kinds by better cross pollination of the blossoms so that but a small part of the revenue derived from the bees is represented in the direct product of honey and wax. The real value of the bees to Iowa cannot be told for there is no way to measure this indirect product. The business is only partially developed in this state and is capable of sustaining many thousands of people in comfort and adding millions of dollars to the resources of the commonwealth.

ADVANTAGES OF IOWA BEE KEEPERS.

Most of Iowa's honey is of high quality and brings the highest prices in the world's markets. When the markets are glutted, the white clover honey is among the first to be moved and seldom is there a season when first quality white clover honey does not move readily. This being the case there is little danger of over production. As long as our honey will bring several cents more per pound than honey from many southern and western localities, in the same market, the Iowa honey producer need have little fear of being unable to sell his crop.

ASSISTANCE NEEDED.

The large correspondence of this department with bee keepers concerning every phase of bee keeping is evidence of the need of some special headquarters for disseminating information relating to bee culture. The industry is one well worthy of encouragement and every possible means should be offered to inquiring bee keepers to secure dependable information. While it would be possible to enlarge the work of this department to cover such needs as is being done in some states, I am of the opinion that the better plan would be to provide a special appropriation for research work in bee culture in connection with the state experiment station at Ames. There is no apparent reason why the man with less than ten colonies of bees should be exempted from taxation. This is depriving the state of revenue from hundreds of thousands of dollars worth of taxable property without accomplishing the purpose for which it was intended. I would suggest that this section of the tax law be repealed and that all bees be taxed the same as other property and that a part of the funds thus raised be appropriated for special work in the development of apiculture at the state experiment station. There is no reason why Iowa should not set the pace for the world in bee keeping as well as in some other lines of agricultural development. The state has not been slow to recognize the value of educational work in other agricultural lines and the bee keepers feel that they should receive the same consideration. By following the plan above outlined no additional burdens will be laid on the general taxpayers.

COMMON CAUSES OF FAILURE.

When one goes into the apiaries in all parts of the state as an inspector is compelled to do, he is impressed with the fact that the standard of Iowa's professional bee men is a high one. The crops they raise and the general showing they make is surprising when one considers how little attention has been given to the development of bee culture in this state. On the other hand the standard of the mass of bee keepers is deplorably low. The average production per colony is not more than 20 per cent of what is possible and what reasonably should be expected with proper attention.

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Group of bee men at Strong apiary, Clarinda.

One of the common difficulties is excessive swarming at the time of the main honey flow. Too often only one super is placed on a hive at a time and this without bait section or foundation in the sections. The bees are slow to enter the super at all under such conditions and when they do, as soon as the super is well filled and the bees crowded for room they will swarm. Dividing the colony in the middle of the honey flow is making increase at the expense of the crop. The professional bee keeper makes his increase at the close of the honey flow and thus gets both a honey crop and increase. Another very common reason why little surplus is stored is because the bee keeper is raising too many drones. The drone is the male bee. It gathers no honey and adds nothing to the productive powers of the hive. The only purpose of the drone is the perpetuation of the species. As each hive has only one queen and one mating is sufficient for life it will readily be seen that but a small number of drones in an apiary will serve all the purposes for which nature designed them. I think it safe to say that I have found more drones in a single hive in the ordinary farm apiary than I found in nearly one hundred hives in the yard of F. W. Hall at Colo, Story county. The drones are reared in larger cells than are the workers. If the bees are allowed to build according to their own notions there will frequently be from one-fourth to one-third of the total comb surface in the hive made up of drone comb. During the productive season the queen lays thousands of eggs daily and in such hives thousands of drones will soon appear. Some one has estimated that it requires the labor of five worker bees to support one drone. I do not know whether this estimate is anywhere near correct but if it is, it will readily be seen that the presence of 20 per cent drones in the total population of the hive will absorb all the surplus honey that would otherwise be stored.

The use of full sheets of foundation in the brood chamber results in the building of nearly all worker combs and thus few drones are present at any time. Large numbers of drones are not only loafers where workers should be present but they consume the product of the labor of their industrious sisters. These sheets of foundation are made of pure bees wax rolled out thin and run between rollers that leave the impression the exact size and shape of the bottom of worker cells. The bees are quick to make use of this boost in building their combs and straight combs with cells nearly all of worker size are the result. Instead of large blocks of drone cells as in natural built combs only a few small places in the corners will thus be used.

Improper preparation for winter is another common source of loss. Thousands of colonies are allowed to remain on their summer stands without suitable protection, with old and failing queens and frequently with honey dew or other low grade stores. The percentage of annual losses is so large as to make one wonder why some people will keep bees at all.

With a systematic plan of education such as has been carried on with corn and some other agricultural crops, these losses can be greatly reduced and the production of honey increased to the point of adding millions of dollars annually to the resources of the state.

Prominent men at Delmar—Frank Coverdale, C. E. Bartholomew, C. P. Dadant and S. W. Snyder.

THE IOWA BEE KEEPER'S ASSOCIATION.

It is doubtful whether there is another agricultural organization accomplishing so much under such unfavorable conditions as the Iowa Bee Keepers' Association. The association has no funds aside from its membership fee of fifty cents annually, yet it is undertaking the improvement of the bee keeping industry along all lines. Its secretary and other officers perform a vast amount of labor without compensation. While the association has never asked for any state appropriation such as has been given the horticultural and other societies it would seem that some provision should be made for the publication of the annual reports, for in no other way, perhaps, can as much be accomplished looking toward the general betterment of an industry than the judicious dissemination of printed matter. Among the objects of the association as announced in its printed matter may be mentioned: To assist in checking the spread of bee diseases, to spread information concerning improved methods of production, to assist its members in marketing their crops, to secure recognition of the industry at state and county fairs, to instruct its members in their legal rights and to assist when necessary in securing them; to inform the public as to the value of honey as food, of the importance of the business of honey production and the value of bees to other crops, and to elevate the business of bee keeping to a place of eminence among agricultural activities.

The membership fee is only fifty cents per year payable to the secretary. The association is affiliated with the national organization of the same name and one dollar additional secures membership in the national association and the official organ, ''The Bee Keepers' Review.'' Officers for 1915 are:

President—C. E. Bartholomew, Ames.
Vice President—B. T. Bleasdale, Des Moines.
Secretary-Treasurer—S. W. Snyder, Center Point.
Directors—A. P. Chamberlain, Des Moines; W. S. Pangburn, Center Junction; J. W. Stine, Stockport.
Attorney—Russell E. Ostrus, Des Moines.

SUMMARY OF THE SEASON'S WORK.

The state has been divided into four districts. Prof. C. E. Bartholmew of Ames had charge of the northeastern district. As before mentioned he was greatly hindered in his work by illness and death of relatives. The southeastern district has been in charge of J. W. Stine, now of Stockport. While the drouth and consequent unfavorable conditions have interfered with the work all over the state, conditions have been particularly unfavorable in the southeastern district. There is great need of work the coming season in both of the eastern districts. In the northwestern district B. A. Aldrich has made good progress, for the disease conditions are not so widely scattered as further east.

The state inspector has had charge of the field work in the southwestern district, in addition to general supervision of the entire state. There are less bees in this district and consequently less appeals for assistance, although some much needed work has not, as yet, been reached. The following summary gives the total results of the combined efforts of the four inspectors and also of the work accomplished by L. W. Elmore, who has been at work in Jefferson county.

Total number of apiaries visited	294
Total number of apiaries where disease was found	127
Total number of colonies in apiaries visited	6,623
Number of colonies diseased	995
Number of colonies with American foul brood	552
Number of colonies with European foul brood	342
Number of colonies with sac brood	91
Number of colonies destroyed	21
Number of cases treated	86

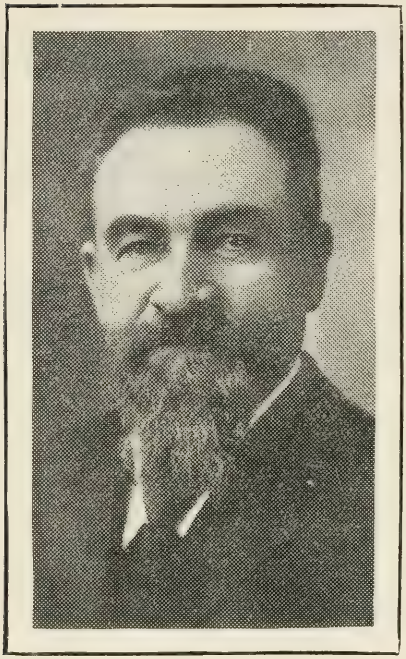
Total expenditure of funds, including salary of the state inspector and four deputies, traveling expenses, office expenses, moving picture film and incidentals, $1,539.46, from January 1, to November 1, 1914.

It need hardly be added that most of the nearly one thousand diseased colonies found have been cared for by their owners and have either been treated or destroyed. It has not been the policy of the department to insist on destruction, only as a last resort. Destruction has frequently been recommended, but whether destruction or treatment should be given has been usually left to the owner to decide.

Respectfully submitted,
FRANK C. PELLETT,
State Inspector of Bees.

SHORT HISTORY OF BEEKEEPING.

C. P. DADANT.



C. P. Dadant.

This is a long subject, for bees and honey were mentioned in the remotest times. So I can give but a short glimpse of it.

Those familiar with the Old Testament are acquainted with the name of "Debora," a prophetess of Israel. But only a few know that this name is that of the honey bee in Hebrew. They know also that Samson found a swarm of bees established in the dried-up carcass of a lion which he had slain a few weeks before. That suggested to him the riddle which he gave for his Philistine guests to solve and which they were at a loss to explain until they bribed his wife to secure the solution.

In the Proverbs, it is said "Eat thou honey, my son, for it is good." The promised land was a country "flowing with milk and honey." Our bee keepers, to advertise their honey, can have no difficulty in securing good testimonials, when they can even quote the Bible in their favor.

In mythology, we find Jupiter, king of gods, born in the Island of Crete, fed upon honey from golden bees by a nymph called Melissa. The Greek word "meli" dignifies. Hence came the names of various plants producing sweets or honey: Melica, melilotus, melissa.

The fabulous story of Aristaeus, king of Arcadia, which shows him as obtaining swarms of bees from the bodies of slain bulls and heifers, is the first where the teaching of bee culture is suggested. Aristaeus was a lover and teacher of agriculture. But his method of securing swarms from the bodies of slain animals is criticized in our day, by Jules De Soignies, a Belgian writer, who merrily suggests that it was probably from this most extraordinary source that foul brood originated. Decaying flesh is hardly the proper conveyer of swarms of bees.

When we seek outside of fabulous folk-lore, for the first writers on bees and their culture, we find the Greek Aristotle, the teacher of Alexander the Great, 384 years before the Christian Era. Later Latin writers, Varro, Virgil, Pliny, who died in Pompei by the eruption of Vesuvius, Columella, who wrote a treatise on agriculture entitled "De Re Rustica" (About Rustic Things). But none of these writers knew much about the natural history of bees. Their teachings were much mixed with the mystic and fabulous beliefs of the time. Most of them believed that bees gathered their eggs from the blossoms which they visited. They called honey "the dew of heaven." They asserted that from it was made the "ambrosia," the food of the gods. Similarly "nectar," the drink of the gods, was thought to be brewed from honey. That is why, to this day, the liquid sweet taken by the bee from the blossom is still called by us "nectar."

The best honey was said to be produced on Mount Hymettus, in Greece, from aromatic plants, like thyme, and orange blossoms. The directions for bee keeping were confined to the methods of hiving swarms and taking the honey. But Virgil had already noticed that there were bees of a yellower color than others, in some districts, and wrote about it.

During the dark ages, many unimportant writers mentioned the honey bee and gave directions for its culture. Bees were of much more importance than at present, since sugar did not exist and honey was the only sweet produced, with the exception of the juice of some fruits and plants, which served mainly for fermented drinks. Beeswax was also greatly appreciated. It was used for candles for divine service. Then the ancients used tablets covered with a light coat of it for writing, with a stylus. The stylus was an instrument shaped like a pencil, sharp at one end and blunt and flattened at the other. The sharp end served to write upon the wax, the flat end to erase what had been written, so that the tablet might be used indefinitely. Hence the Latin expression employed to advise pupils to often correct their work: "saepe stylum vertas" (often invert the stylus.)

It was not until 1609 that an English writer, Butler, affirmed the existence of a queen, or mother bee. Until then she was called "king." The purpose of the drones was unknown, although some asserted that they were intended to keep the brood warm and hatch it, just like sitting hens.

There are people yet who believe this to be their main function, and who also believe in the existence of a king bee.

The production of wax was also thought to be from the pollen which the bees bring home on their legs.

Swammerdam, in 1737, first described the queen as a female, for he had dissected this bee. He found the ovaries. But the mating was ascertained by Huber, the first positive scientist to give us a correct natural history, at the end of the eighteenth century.

Huber used a leaf-hive, the first style of movable-frame hive in existence, now called "closed-end frame hive." His frames were hinged and opened like a book. He was one of the most persistent observers, though he had to rely on the eyes of others for his experiments, for he was blind.

During that wonderful century, the eighteenth, a number of writers recorded important discoveries; Wildman, Schirach, Della Rocca, Duchet, Reaumur and hosts of others studied the honey bee. The production of wax was ascertained, the function of the drones proven and observing hives built that permitted investigation. In 1845, in the Bienenzeitung, the first bee journal, the famous Dr. Dzierzon published his discovery of parthenogenesis, or the ability of a queen bee to lay eggs that would hatch into live drones without having ever mated. This was first written as a hypothesis. It soon became an established theory and is now considered as a proved fact. Numerous scientists, especially in Germany, studied this problem, and the present methods of rearing queens from worker eggs were fully inaugurated.

Dzierzon was keeping his bees in what he called a movable comb hive. It was simply composed of a box in which top bars were set upon which the bees built their combs. But as there were no side bars to these, the bees fastened the edges of the combs to the walls of the hive and at each visit it was necessary to separate these combs from both ends in order to be able to lift them with the top bar to which they adhered. It was with such an unhandy contrivance that he made some of the most interesting experiments which have been handed down to us.

A little later Berlepsch invented a movable frame hive, which is still much used in Europe. It had most of the principles of the movable frame hive in present use, with the exception of the removable ceiling of the brood chamber or supers, and was made like a cupboard. In other words, the frames of this hive have to be removed from the rear, one at a time, and when you wish to examine the front comb or that which is nearest the entrance, you must remove all the others first, one at a time, drawing them out of the hive horizontally. It will be understood, therefore, that the frames of the Berlepsch hive run parallel with the entrance, instead of at right angle with it.

A little later, Debeauvoys invented a top-opening movable frame hive, but the frames were made to fit closely in the hive at both ends. This hive worked finely as long as there were no bees in it, but as soon as the bees occupied it they fastened the frames with propolis, so that it was impossible to move them without breaking them.

At length, Mr. L. L. Langstroth experimented upon this same subject and in 1852 obtained a patent on the movable frame hive in use the world over at the present day, a hive in which the frames hang upon rabbets at the ends of the box, by two projecting shoulders, these frames separated from the walls, ceiling and bottom by a bee space. This invention caused a revolution in bee culture. Mr. Langstroth himself was a very careful observer and made many remarks which have been confirmed to this day. He was the first man to dare assert that the bee moth never destroyed a single colony of bees, that the colonies which had died supposedly by the invasion of the moth worms were invariably queenless, or contained a worthless queen, so that the colony was doomed. He boldly stated that it was as senseless to imagine that the moths could destroy a colony of bees in normal condition as to believe "that carrion birds or worms, which are devouring a dead horse, were the primary cause of its untimely end."

Although the principle of the Langstroth hive has been criticized by some students, who have called it "a rattle box" owing to the freedom of hanging of its frames, this hive, in one shape or another, is at present used all over the civilized world, in many places to the exclusion of any other hive.

After 1852, bee culture took long strides. In 1861, the American Bee Journal was established by Samuel Wagner. It was the third bee journal in point of age, the first being the Bienenzeitung, already mentioned by me, the second L'Apiculteur of Paris. The old Bienenzeitung has been discontinued, other German bee papers having taken its place.

In 1865, Major Hruschko, of Dolo, Italy, invented the honey extractor, by the use of which honey is removed from the combs without damaging them, so that they may be returned to the hive to be filled again and again. He hit upon this discovery by accident. Having given his little son a piece of unsealed comb honey to carry on a dish, the boy tied this in his handkerchief as in a sling and swung the dish around his head. The honey was found to have emptied itself into the dish. That gave a clue to the making of the instrument which consists of wire-cloth baskets revolving speedily within a metal receptacle. Little beginnings often make great endings.

They certainly had no idea of the great proportions which the use of the honey extractor would take. Millions of pounds of honey are now taken all over the world by this method, which produces a better and cleaner article, while permitting the expensive comb to be returned to the hive, to be filled again. It did away with the "strained honey" obtained by crushing the combs and pressing the honey out. Perhaps this assertion is a little too strong, for in many parts of Europe and in a few districts in this country, there are still bee owners who are uninformed and persist in breaking up the combs and straining the honey. In whole districts, for instance in Southern France, visited by me last year, and in Italy, England, etc., especially in the heather regions, establishments are in existence which buy brimstoned colonies every fall and render up the combs by the straining process. The honey thus produced is dark, strong, and cloudy. I was told that it is used principally to give flavor to glucose compounds sold in some countries under the name of honey.

Although much remains to be done in enlightening the country people of Europe on practical and scientific production, the fact is that the bulk of the honey produced through such countries as ours and in the more enlightened parts of Europe is now harvested in the best shape and in the most economical manner. The straw or willow skep and the "gum" or the box hive have been replaced by the movable-frame hive. With the exception of Switzerland, which is very far advanced in progress, the older countries are following somewhat in the rear of the newer States, Canada, Australia, New Zealand, the United States, etc.

A necessary complement of the invention of the extractor was comb foundation. To handle frames readily, to be able to sell honey in nice little sections, it was indispensable that the combs be built straight in them. Comb foundation not only secured that end, but saved the bees a great deal of labor and a great deal of honey expenditure, since beeswax worth commercially between 25 and 35 cents can be thus returned to the hive in such acceptable shape as to save the bees from 8 to 12 pounds or more of honey for each pound of wax. The diminishing of the amount of drone comb in undesirable colonies is also a great advantage of the use of foundation with worker cell base. This wonderful improvement was thought out in the middle of the nineteenth century, by Mehring, a German. But it remained for an American, A. I. Root, to make it in a practical way. With the help of an able machinist, Mr. Washburn, he produced cylinders in 1876 that made foundation as thin as 8 square feet to the pound. This was later improved upon by Vandervort, in the 80's, and thin sheets are now made as light as 13 square feet, which have long ago removed the objection of a fishbone in the honey. Strange to say, on the European Continent, beekeepers have only slightly improved upon the Mehring invention and make foundation by presses which our American beekeepers would reject, owing to its imperfection and its great weight.

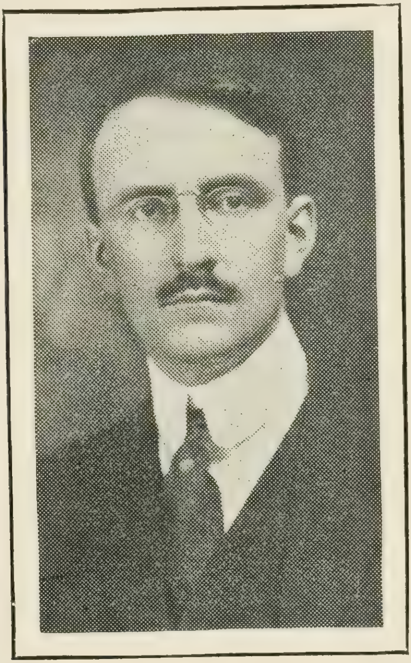
Minor inventions, such as the bee smoker, the honey knife, were improved upon from time to time since the middle of the nineteenth century.

Advance in the diffusion of apiarian knowledge is noticeable every day in a more marked manner. The Germans have dozens of noted writers and scientists. In Switzerland, Bertrand, in England, Cowan, have written books on bees which have been translated in seven or eight different languages. Another Englishman, Cheshire, in his "Bees and Beekeeping," gave a summary of modern advances, in 1886. In this country, Langstroth, Quinby, Cook, Root, C. C. Miller have written the leading text books on the subject. But why name any, when so many have to be left out?

Queen rearing and the importation of bees from one country to another to try the best races have become common. The selection of the best honey producers as breeders has increased the yield of honey materially. A new method of rearing queens by making artificial cell cups, invented by Doolittle some 26 years ago, has permitted an unlimited production of queens from selected stock.

Bee journals are in many countries. Our own United States have four, France has a dozen, Italy two. Our Department of Agriculture is giving bees a special place in the Bureau of Entomology and the spread of diseases is being checked with their help.

The growth of bee keepers' associations is perhaps one of the most marked features of progressive bee keeping. A few years ago, a meeting calling together as many apiarists as are now found in almost any state convention would have been an impossibility. But I make bold to say that we are only at the beginning of success in our industry. The United States have not yet produced in a single year enough honey to supply a pound to each inhabitant, and there is plenty of room for more bees.



Dr. E. F Phillips.

TEMPERATURE AND HUMIDIITY IN THE WINTERING OF BEES.

E. F. PHILLIPS, WASHINGTON, D. C.

It is not necessary to argue before a company of beekeepers, especially in the North, that the successful wintering of bees is not only one of the most important problems before the bee keeper, but also at times one of the most difficult of solution. You all know that the winter losses are considerable, but it is nevertheless a fact that bee keepers often fail to realize in full the magnitude of the winter loss, even in an average or even in a mild winter. The season of 1911-12 was the most recent case that we have experienced of a winter accompanied by severe losses. The summer of 1911 was a poor season for most localities in the North .and most colonies were weaker than usual all summer. They went into winter weak, short of stores and with too many old bees. The winter was exceptionally severe and many colonies were not in condition to expend the energy necessary to maintain life, and as a result the loss by the death of colonies was over 50 per cent in many apiaries. If the bees had been in condition to obtain the bountiful crop of 1912 that year would have been a banner year in beekeeping, but there were not enough bees.

Similarly in 1909 there was a dearth of nectar but an abundance of honey-dew in many localities, causing enormous losses in the following winter. The winter of 1903-4 was another of heavy losses, while that of 1884-85 was one of the worst experienced by American beekeepers.

It is, of course, evident that good beekeepers lose less colonies than those who are uninformed, but even the good beekeeper loses sometimes. An estimate of 10 per cent for the average annual loss is probably conservative, and it speaks well for beekeeping as an occupation that American beekeepers can sustain such a loss year after year without destroying the industry. Looking, then, at the other side of the picture, it is clear that if this loss can be prevented beekeeping ought to advance rapidly to its rightful place in American agriculture.

From the experience and observations of beekeepers we now know considerable about wintering, and our information is increasing constantly. There are two facts concerning this information to which attention should be directed. First, many of the very best observations have appeared in the bee journals, but are now practically forgotten because beekeepers are often not careful enough to keep complete files of their journals and to consult them frequently. A bee journal is not altogether a newspaper, but should be considered as a permanent record of the good things observed. The other consideration is that the results have been obtained at enormous cost, since they are records in the main only of gross results. A beekeeper tries a certain method of wintering and necessarily gauges his success by what is left the following spring. With the facilities of the apiary detailed observations as to the daily activities and requirements of the bees are impossible, and consequently our knowledge of wintering is based largely on commercial experience, but is lacking in facts concerning the detailed needs of the bees.

In the present discussion of this subject it is proposed to depart somewhat from the usual methods in discussing the wintering problem and to record some of the things that bees do in winter, as well as to explain some of the physical phenomena observed. In doing so I shall draw on the results published by Mr. Demuth and myself concerning our work of the past two years. While I am having the pleasure of attending this meeting, Mr. Demuth is back at the laboratory making more observations, although rightfully we should read this paper as a duet.

THE SOURCE OF HEAT IN THE COLONY.

It is a well-known fact that bees generate heat during cold weather, so that the temperature of the cluster never drops very low. The lowest temperature that we have found is 57° F. In order to see what the bees do during this period of heat production, we devised a special outfit so that we could see the inside of the cluster. A colony in winter forms a compact, approximately spherical cluster and on the outside of the cluster there is nothing that one can see that suggests the heavy heat production that must take place. However, a narrow hive was provided, with double glass sides and top, with an air space between the sheets of glass to act as an insulation. The stores were then so arranged that the only place available for the cluster was next to the glass on one side. In the outside space were placed a number of the electrical thermometers which we used and which are briefly described in Bulletin No. 93 of the Department of Agriculture, to which those interested are referred. In the space provided there was not room for a spherical cluster, so the bees formed a hemisphere, the equator of which was against the glass. This showed as a circle of bees on the glass, exposing to view the center of the cluster.

It was then clearly demonstrated that the cluster is not uniformly compact. The cluster consists, between the combs and sometimes above and below them, of an outer shell of bees packed close together, with their heads toward the center. The thickness of this ring varies with the weather being thicker when the outer temperature is warm and when less heat production is needed, and becoming thinner with the increase in heat production. This is because when more heat is produced more beees are needed for this work, leaving less for the outer rim.

In order to expose this colony (Colony C) to rapid changes in temperature, the hive was placed on the roof of the building, and while one person watched the bees another read the temperatures in the room below where the instruments were located. A telephone was installed, so that the two persons could be in constant communication, head pieces being used, so that the hands of both observers were free. The observations made on the roof were then given over the telephone and all records were made below. This colony was of course in the light, but the normal cluster was nevertheless observed. The colony was disturbed as little as possible during the observations to eliminate abnormal conditions.

The nearly spherical cluster of bees consists, between the combs and sometimes above or below them, of an outer shell of bees close together, with their heads toward the center. This ring may be several layers thick. The position with the heads inward is typical, except when condensed moisture drops on the cluster, as it often does in cool weather, when the bees at the top turn so that their heads are upward. The bees in this outer shell are quiet, except for an occasional shifting of position. Inside this rather definite shell the bees between the combs are not so close together, nor are they headed in any one way. Considerable movement, such as walking, moving the abdomen from side to side, and rapid fanning of the wings, takes place inside the sphere, and when a bee becomes unusually active the adjoining bees move away, leaving an open space in which it can move freely. Two bees may often be seen tugging at each other. In addition to the bees between the combs, placed as above described, others are in empty cells of the comb on which the cluster is always formed, always with their heads in. A verification of these statements is contained in the following observations, and the experiment may easily repeated by anyone: For the purpose of obtaining a colony without combs for another experiment, a hive was opened December 15, 1913, while the outside temperature was low enough to cause the formation of a compact cluster. When the combs were separated the circle of bees in the shell was clearly observed. When a comb from the center of the cluster was shaken the active bees in the center of the circle dropped off readily, and those in the outer shell which were somewhat sluggish were removed with more difficulty. After this was done those occupying empty cells in the center of the sphere backed out of the cells and were shaken off. Finally those occupying cells in the border of the sphere backed out, showing a well-marked circle on the combs. Evidently the bees in the shell, whether in the cells or between the combs, are less active than those in the interior of the cluster. Naturally such a manipulation as this is not to be recommended, except for purposes of demonstration.

It is clear from observations previously recorded that the highest temperatures are those of points in the center of this shell, and this is to be expected, as the heat is generated here. The outer shell constitutes an ideal insulator for the conservation of the heat, since the bees arranged so close together form small dead air spaces in their interlacing hairs, especially those of the thorax, and afford still more insulation with their bodies. The abdomens of the bees in the outer row are practically separate one from another, and must often be exposed to severe cold. That this method of conserving heat is effective is shown by observations on undisturbed colonies out of doors. For example, on January 14, 1914, there was at 9 a. m. a difference of 68° F. between thermometers 14 (center of the sphere) and 16 (outside the cluster) of Colony D, which were less than 4½ inches apart on the same level in the same space between combs, and a difference of 75° F. between this couple and the bottom board 4¼ inches below it. What this difference might sometimes be in colder climates may be imagined. Examples of this kind might be multiplied indefinitely from the records of these experiments.

The source of the heat of the cluster must, of course, be the oxidation of the food consumed by the bees. The bee is classed as a cold-blooded animal, in that the temperature of the individual bee is practically that of the surrounding medium. There is obviously, from the records just given, no internal regulation of the temperature of the body, such as is found in birds and mammals, for the temperature of a broodless cluster varies greatly. From the observations made on the various colonies, especially Colony C, it is clear that heat for the warming of the cluster is produced by muscular activity. While, of course, some heat is doubtless liberated by other life processes, this is practically negligible when bees are quiet, as in Colony A, when above 57° F. That higher temperatures may be produced greatly increased muscular activity is required, and in Colony C in cold weather bees in the center of the shell of insulating bees were seen fanning vigorously and executing other movements, such as shaking and rapid respiration. We thus have the paradoxical condition that bees fan to heat the cluster in winter as well as to cool the hive in summer. Observations of this kind were repeated beyond number, and this theory of the method of heat production is entirely supported by the repeated observation of a humming noise from the cluster during cold weather.

A few details of the observations on Colony C may be of interest. For example, one bee was observed fanning vigorously for 7½ minutes (9.53 to 10.00½ a. m., January 23), while the other bees kept a space cleared for it. The temperature of the nearest thermometer rose ½° F. during this time. At 9.52 this thermometer was almost a degree cooler than at the time of greatest heat during the fanning. The rapidity of fanning of the wings varied, and toward the end of the time it became so slow that the outline of the wings was distinguishable. After the excessive activity this bee stood in the same place for a time. Rapid respiration may play a more important part in heat production than at first appears. One bee was observed to breathe 21 times in 14 seconds and then cease the rapid respiration. On other occasions 50 or more bees would begin shaking their bodies from side to side.

THE EFFECT OF CHANGES IN EXTERNAL TEMPERATURE ON THE HEAT PRODUCTION.

Another colony (Colony A) was used during the winter of 1912-13 to determine the responses of a normal colony to changes in outer temperature. It also was located on the roof, where the bees were free to fly when ever the weather permitted, and where it was exposed to rapid changes in temperature. It was in a 10-frame Langstroth hive, the entrance being reduced to ⅜ inches deep and eight inches wide, and the colony was not packed or given additional protection. In this hive we placed nineteen electrical thermometers, three on the bottom board in a row down the center, one in each upper corner and twelve among the combs, distributed in such a way that the cluster could never get away from all of them. Readings were made hourly from 9 a. m. to 4 p. m. through the entire period of observation (September 26 to March 28), except Sundays and holidays, and at intervals additional special series of readings were made every 15 minutes (sometimes every 30 minutes) during the night (5 p. m. to 8:45 a. m.) for periods of several days each. In all 41,413 records were made of temperatures in Colony A.

The reaction of the cluster in heat production, as induced by changes in external temperature, is well shown by the records made from noon November 13 to 2 p. m. November 15 (1912), when readings were made hourly from 9 a. m. to 4 p. m. and every 15 minutes at night. From noon on November 13 the outside temperature dropped slowly until 6 a. m., November 15, and the weather was cloudy, so that the bees did not fly. At noon on the 13th the outside temperature was about 69.2° F. and all the points within the hive were then cooler than the outside air, due to the fact that it took some time for the inside of the hive to warm up. At 4 p. m. the outside temperature had dropped to 65.3° F., when it was lower than any of the points within the cluster, which had in the meantime become warmer. From this time until 6 p. m. the next day (14th) the temperature wthin the cluster gradually dropped as the outer air cooled, until the lowest one (No. 9) was 57° F. (Outside temperature, 48.2° F.). The generation of heat began at 6:15 p. m. at this point, which was to one side of the cluster, and is to be attributed to the movement of the bees in forming a definite cluster. At 6:30 p. m. a rise in temperature was noticed on thermometer 19, at the other side of the cluster. Until 10:15 p. m. the changes in temperature are probably to be interpreted as incidental to the formation of a compact cluster, and from this time until the next day at the close of the series of readings thermometers within the cluster showed a considerably higher temperature than the outer air, or than the thermometers outside the cluster. The maximum in this series was reached at 3:15 a. m. November 15, when thermometer 12 in the center of the cluster registered over 89.4° F.

After the coldest outside temperature was reached and the outer air began to get warmer (6.15 a. m., November 15), there was a tendency for the cluster temperatures to drop. This is somewhat noticeable in the case now being discussed, and is more clearly seen in records obtained in other series. In general, after a period of cold, when the outside temperature begins to rise, the cluster temperatures drop slowly to meet the outside temperature. The generation of heat is reduced, or even discontinued, only to be increased when the outside temperature again drops, or when it gets high enough to induce greater activity, as in flight. It is found also by taking more frequent readings when the cluster temperature is above about 69° F. that it is less constant than when it is below this temperature, indicating that temperatures above this point the bees move about to some extent, while between 57° and 69° they are quiet, unless flight is desirable owing to a long confinement.

This series of readings is supported by numerous records taken on this and other colonies throughout the winter, and, since all the observations tend to confirm what was first seen on the record presented here, we feel justified in presenting a definite statement of the reactions of the cluster to outside temperatures. It may be added that a careful study of the records of previous investigators fails to show a similar statement on this subject. When a colony is without brood, if the bees do not fly and are not disturbed and if the temperature does not go too high, the bees generate practically no heat until the coolest point among the bees reaches a temperature of about 57° F. At temperatures above 57° F. a compact cluster is not formed, but the bees are widely distributed over the combs. At the lower critical temperature, which is for the present stated as 57° F., the bees begin to form a compact cluster, and if the temperature of the air surrounding them continues to drop they begin to generate heat within the cluster, often reaching temperatures considerably higher than those at which they were formerly quiet and satisfied. It is evident, therefore, that the temperature within the cluster is far from being uniform in winter, as has been, in a sense, assumed among practical beekeepers. At the temperature at which other insects become less active (begin hibernation), the honey bee becomes more active and generates heat, in some cases until the temperature within the cluster is as high as that of the brood nest in summer. To sum up, when the temperature of a colony of undisturbed broodless bees is above 57° F. and below 69° F. the bees are quiet and their temperature drifts with the outer temperature; at lower temperatures they form a compact cluster, and the temperature within it is raised by heat generated by the bees.

We desire to state that while the lower critical point, 57° F., appears rather well established, the observations up to the present do not justify too definite a statement concerning the upper limit of quiescence. It must be emphasized that these conditions do not apply when the colony has brood. The rearing of brood in winter causes a marked increase in heat production and constitutes a condition which may become one of the most disastrous that can befall a confined colony.

When the heat production of the colony is explained, we are able to understand to some extent the divergence in the records obtained by other observers. It has, of course, long been known that bees generate heat, and it has been pointed out that during cold weather the temperature of the cluster is often higher than during warmer weather. While the temperatures previously recorded are in most cases abnormal, due to disturbance, the chief difficulty in understanding the phenomena which takes place is due to insufficient observations. For example, if between noon November 13 and 2 p. m. November 15 only a half dozen temperature records had been made for the cluster (and perhaps without finding the warmest part of it) and the outside air, it would have been impossible to determine the limits of heat production. Most observers have been satisfied with a few observations, and seemingly everyone who has inserted a thermometer in a hive has felt called upon to publish the results, thereby only confusing the problem.

THE EFFECT OF CONFINEMENT AND THE ACCUMULATION OF FECES.

Before beginning a discussion of the effect of confinement and the accumulation of feces, it may be recalled that during the active summer season the length of life of worker bees is in a sense determined by the work done by them rather than by days or weeks. The greater the necessity for excessive activity the shorter the term of life. We believe that they have evidence to prove that this applies to the winter also, and this belief is entirely supported by the experience of beekeepers everywhere. That bees may come out of winter quarters strong in numbers and vitality, it follows that the work to be done by the bees in the winter should be reduced to a minimum; and the winter problem, as thus interpreted, is therefore to find the conditions under which broodlees bees do the least work. The work which broodless bees do in winter consists, so far as has been determined, solely in the production of heat or in activity incident to flying on warm days (if free to fly), and therefore the problem, so far as it is under the control of the beekeeper, is primarily to obviate the necessity for the production of heat. If brood is reared the work of the bees is necessarily enormously increased, and their vitality is correspondingly decreased. So far as evidence is available in our work, the colony is not fully recompensed for this expenditure of energy by an increase in the strength of the colony by bees thus reared.

The colonies to be discussed under this heading (Nos. 1 and 3) were wintered in a constant-temperature room at the University of Pennsylvania, Philadelphia, Pennsylvania, in special 6-frame hives (to economize space and concentrate the colony so that fewer thermometers would be required) with full entrances and were not propolized or sealed at the top. During the regular series of readings the room was kept at a temperature which rarely dropped below 40° F. or went above 45° F., and the average temperature from October 14 to March 6 was 42.67° F. This temperature was chosen as being nearly the one usually considered best by beekeepers. The foods given these colonies were stored in the combs, just as placed by the bees. There was some pollen available in colony No. 1. On this colony, 24,077 temperature readings were taken.

According to what has been said in the previous section, we should expect bees at such a temperature to maintain a compact cluster and to generate some heat at all times. This was actually the case, the temperature of the interior of the clusters dropping below 64° F. only a few times in either colony.

Colony No. 1, on honey stores, was in the constant-temperature room from October 12, 1912, to March 24, 1913, or 163 days. It was then removed for a flight and put back the same evening, where it remained until March 28. From March 7 at 9 a. m. until March 28 at 4 p. m. readings were made on this colony every 15 minutes night and day, with the exception of the period between 9 a. m. and 7 p. m. on the 24th, when it was out of doors. During this period of three weeks the temperature of the room was changed slowly, being raised as high as 64° F. and cooled to 13° F.

When this colony was first placed in the room for the regular series of readings, after a preliminary confinement, October 12 (the readings were begun Monday, October 14), it maintained a cluster temperature which usually lay between 64° and 68° F., the daily average temperature departing from these rather narrow limits only four times up to November 22. The average temperature is 66.5° F. During the first five weeks the temperature of the room was less regular than later (due to faulty working of the regulating apparatus), and this doubtless accounts for some irregularities in the cluster temperature. At first the three thermometers in the cluster (1, 2, and 5) gave temperature readings quite close together, while thermometer 6, which was near the cluster, gave readings intermediate between the three thermometers of the cluster and the four others in the hive, farther from the cluster. After November 22 the records of the thermometers in the cluster were more widely separated and the temperature of the center of the cluster (shown on thermometer 5) tended to rise gradually. It varied constantly, but by December 7 and from then until the end of the month, it averaged between 69° and 75° F. On November 29 and December 12 the cluster temperature rose to over 88° F. From the 1st of January until March 6, which ended the regular series of readings, the cluster temperature became more and more irregular, and on January 20 the cluster moved (probably to accommodate itself to the stores) until theremometer 2 was nearer the center and showed a higher temperature than thermometer 5. The size of the cluster was gradually decreased by the death of the bees, and all the thermometers except 2 and 6 show a gradual decrease in temperature until finally, from about February 25 to March 6, they are all low and of nearly equal temperature. The two thermometers giving high readings continued to show in general a higher and higher average temperature and to become more irregular (except from February 15 to March 1), the periods of increased heat becoming more frequent. There was absolutely no regularity in these intervals. After February 1 the temperature of the cluster varied between 75° and 91° F., the average from February 1 being 85.4° F.

On March 6 all colonies in the constant-temperature room except two were removed. The colony described above (No. 1) and one other (No. 12), not to be described at present, were left. On March 7 at 9 a. m. the temperature of the room stood at 42° F., and the temperature of the interior of the cluster was about 84° F. The brine which cooled the room was then shut off and the temperature of the room rose very slowly and regularly, until on March 11 at 8:45 a. m. it was 64° F. For the first day the temperature of the cluster was slightly variable, and at 10:45 p. m. thermometer 6, which had been cooler than thermometer 2, showed a rise in temperature (probably due to a shifting of the cluster), and from then on to the 24th they were nearly of the same temperature at all times. On March 8, at 3 a. m., thermometer 2 rose to 87° F. (room temperature, 48.5° F.), having previously shown a cooling. The cluster temperature then dropped slightly, showing relatively little variation until at 4:15 p. m., March 9, it stood at 77.3° F. (room temperature, 55.7° F.). As the room temperature continued to rise, the cluster temperature increased still more rapidly, until at 8:15 a. m., March 11, it reached 93° F. (room temperature, 64.2° F.). A little brine was now turned on, sufficient to lower the temperature gradually to 58° F. at 9 a. m., March 12, and it again rose to 63.3° at 5:45 p. m., March 15. During this period the cluster temperature followed the room temperature, but remained constantly over 20° warmer. The room was again cooled slowly, and the cluster temperature dropped until on March 16, at 3 p. m., the room was 49° F. and the cluster 77.5° F. As the room continued to cool, the cluster temperature increased, the bees responding to the colder temperature, until at 4:15 a. m., March 17, the room was 48° F. and the cluster 88° F. The room then gradually warmed, and again the temperature of the cluster dropped and then again rose with the room temperature, remaining always over 20° warmer. At 6:45 p. m., March 19, the brine was turned on full and the room cooled rapidly, reaching the minimum of 13° F. at 9 p. m., March 20. At no time, however, did any of the thermometers in the hive record a temperature below 33° F. Here it remained constant within 0.1° F. for about six hours, during which time the cluster temperature varied between 86.5° and 89.5° F. (a difference between the room and the cluster temperatures of 73° to 76° F.) The brine was turned on full and the room cooled rapidly, reaching the mini- 24, when it reached a temperature of 44.5° F. During this warming the cluster cooled until at the close it was varying between 72° and 79° F.

As stated above, the colony was now (9 a. m., March 24) removed for a flight and put back the same day at 7 p. m. In the meantime the room was cooled to 33° F. When the bees were put back into the room the temperature of the entire inside of the hive showed great variation and naturally an increase due to the warming up while out of doors and to the activities of a good flight. The points outside the cluster dropped rapidly, but it was midnight, March 25 (31 hours), before the curves of temperature again appeared normal. The room was slowly warmed to 63.2° F. at 6:30 p. m., March 26, and then slightly cooled to 54° F. at 6 a. m., March 27, and again warmed to 58.5° at the close of the series, 4 p. m., March 28. After the flight the temperature of the cluster never dropped below 89.5° F., and the highest temperature reached was over 95° F. (soon after the flight). Thermometer 6 remained high, but thermometer 2, which had previously been high, now approached the other thermometers, probably due to a rapid loss of bees and to a decrease in the number of bees during the flight. It must be recalled that these bees had been confined for an abnormally long time and were subjected to treatment which is at least unusual. After this colony was taken from the room for the last time it was found that thermometer 6 was over a patch of larvae, and, estimating as accurately as possible, the eggs from which these hatched must have been laid at the time when the room was coldest (March 20-21) and when the cluster temperature was at its highest point. There had been no brood previously according to the temperature records as compared with those of this colony earlier and with those of other colonies, nor was there much evidence of increased heat production due to the presence of brood until after the flight. Probably no extra heat was produced for the eggs, and possibly the hatching of the eggs was somewhat delayed by the low outer temperature. The effects on the cluster temperature which might be expected from a flight, in relieving the accumulation of feces, were not observed, because brood rearing had been begun.

Colony No. 3 was placed in the constant temperature room October 12, 1912, after a good flight, and readings were begun on Monday, the 14th. In all, 2,165 temperature records were made on Colony 3. The stores provided this colony consisted of honeydew honey, which was gathered in the department apiary and which, since it granulated almost at once, had been removed by melting up the combs which contained it. After this operation it remained liquid. During the summer of 1912 some of this honeydew honey was fed to a colony in the open, during a dearth of nectar, and was stored in new combs above the brood chamber, in which no cells of pollen were to be found. After the second storing the honeydew honey was clear, well ripened, and did not granulate. This colony was also in a six-frame hive, as previously described, and contained five thermometers (Nos. 14-18) among the combs. It is of course well known to beekeepers that honeydew honey is not a good food for winter.

When this colony was first put into the constant temperature room it behaved much as did Colony No. 1, except that the temperature varied between 69° and 78.7° F. for the first week, being slightly higher and more variable than that of Colony No. 1. The second week it remained much the same, the temperature, however, varying between 69° and 80° F. From this time on the temperature of the center of the cluster rose rapidly, never dropping below 79° F. From October 29 almost to the close of the readings. After November 4 the temperature remained above 86° F., and after November 11 it dropped below 89° F., only twice until the end. Thermometer 17 at first read about 4° below thermometer 14, but after November 11 they were close together until November 25, when thermometer 17 began to cool rapidly, due to loss of bees, and after November 30 thermometer 14 cooled rapidly until, on December 9, it showed that no more bees remained alive. From December 2 to 7, inclusive, there was little heat generated, due to the scarcity of bees. It is of interest to observe the records of thermometer 16, near the cluster, but usually outside of it. It at first showed a temperature but little higher than the two thermometers away from the cluster, but on October 31 it began to rise until, on November 12, it reached 80.5° F., when it was doubtless covered by the bees. Even the two thermometers (15 and 18) clear to the back of the hive rose until, on November 13, they recorded 61.5° F. These thermometers showed about the same temperature for about ten days, and then these two and thermometer 16 showed a cooling, since the bees were dying so fast that there were no longer enough to warm up these thermometers away from the center of activity. It was to be expected that this colony would die, and the experiment was performed to learn the phenomena incident to the loss.

Before summing up the results of these two colonies, Nos. 1 and 3, it may be stated that, so far as the evidence here presented is concerned, the results as far as here discussed are confirmed by records from ten other colonies kept in the constant temperature room, but fed other foods and otherwise different. There is in all of the records no evidence which we can interpret as at all contrary to the views here stated.

It is evident from the behavior of Colony No. 1 that at least one factor entered which gradually caused the bees in the cluster to generate more and more heat until at the beginning of the special series, March 7, the cluster temperature was about 20° warmer than it was at the same room temperature at the beginning of the confinement. It is also seen that during the special series, March 7-24, the cluster temperature always remained at least 20° above the room temperature, whereas from the discussion of bees unconfined (Colony A) we might expect them to cease heat generation when above the lower critical temperature (57° F.) In the case of colony 3, fed on honeydew honey stores, the factor which caused more heat to be produced evidently increased much more rapidly. As stated previously, honeydew honey is a poor food for winter and is so recognized. It contains the same sugars as honey, but contains in addition a considerable amount of dextrin, the particular lot fed to colony 3 containing 4.55 per cent while good honeys contain only a fraction of 1 per cent. From the evidence at hand it appears that dextrin can not be digested by bees and, whether or not this is the explanation, honeydew honey causes a rapid accumulation of feces which usually results in the condition known as dysentery, in bad cases of which the feces are voided in the hive. In the case of Colony 3 the whole hive inside and out, as well as the frames and combs, were spotted badly, the inside of the hive being practically covered. Even with fine honey stores such a spotting is usually noticed after a prolonged confinement, especially in severe weather (or during brood rearing). It therefore appears that the accumulation of feces acts as an irritant, causing the bees to become more active and consequently to maintain a higher temperature. We are therefore justified in believing that the cause of poor wintering on honeydew honey is due to excessive activity, resulting in the bees wearing themselves out and ultimately in the death of the colony. In the case of colonies on good stores the feces accumulate more slowly and the excess activity is not so marked and is induced more gradually. The accumulation of feces due to confinement causes increased activity and this in turn is the cause of excessive heat production, resulting in a reduction in the vitality of the bees.

It therefore follows that excessive activity causes the consumption of more food, resulting in turn in more feces, so that colonies on poor stores are traveling in a vicious circle, which, if the feces can not be discharged, results in the death of the colony.

While the activity of the cluster is greater at some times than at others, there are not, as has been held, regular intervals of activity at which the colony rouses itself to take food. At no time is a colony kept at a room temperature of 45° F. or less in a condition which can be characterized as inactive. Presumably the reported "intervals of activity" have occurred when the colony made a noise due to disturbance by the beekeeper.

The bees in Colony 3 were compelled to work constantly to maintain so high a cluster temperature. In fact, they did more work than colonies wintered in the open air. Keeping these bees in a cellar protected them from low outside temperatures, but the lack of opportunity for a normal ejection of feces caused a condition more serious than extreme cold weather. We seem to have here an explanation of the fact, often observed by beekeepers, that some colonies wintered in the cellar are in worse condition in the spring than colonies that are exposed to severe cold. Poor food is evidently a more serious handicap than low temperature.

HUMIDITY IN WINTER.

This subject is one concerning which less definite information is available, although it is one which has been much discussed by beekeepers. One of the chief difficulties seems to be a lack of information concerning the interrelationship of temperature and relative humidity and it may be well to make some of these points clear.

THE SOURCE OF MOISTURE IN THE HIVE.

All northern beekeepers know that under some conditions, especially in the cellar, the atmosphere in the hive in winter may become so laden with moisture that it cannot all remain in the form of water vapor but condenses on the hive and combs. Water may even run from the hive during the winter confinement. Obviously this moisture does not come from outside the hive for this often occurs when the cellar appears dry.

Within the hive the only source of moisture is the food consumed by the bees. Honey not only contains about 20 per cent water but when the sugars are consumed and assimilated the final products are carbon dioxide and water. Honeys vary in composition but on an average when one pound of honey is consumed there is produced about two-thirds of a pound of water, and since honey is one and one-half times as heavy as water, one gallon of honey when consumed produces approximately one gallon of water.

If we take for example a bee cellar containing 216 colonies and estimate the average consumption of honey during the winter at ten pounds per colony the total honey consumed is 2,160 pounds or 180 gallons. This produces 1,440 pounds of water or 180 gallons, enough to fill six 30 gallon barrels. If these colonies are in the cellar for four months there will be given off one and one-half gallons of water a day and unless there is considerable movement of air within the cellar the atmosphere cannot take it all up as water vapor and condensation will occur.

THE RELATION OF HUMIDITY TO TEMPERATURE.

Before discussing the changes which take place in the humidity of the hive it may be best to take up some facts concerning the moisture content of the atmosphere as influenced by temperature. It is of course well known that if warm moisture laden atmosphere is cooled its capacity for water vapor is decreased and moisture is condensed. This is shown in the condensation of moisture on the outside of a glass of ice water. Similarly we have condensation on the surface of the leaves which we call "dew" if the moisture remains liquid and "frost" if it is frozen as it condenses. These phenomena are duplicated in the bee hive and bee cellar.

The problem of the beekeeper is to eliminate this moisture, which leaves the body of the bee in the form of water vapor, without condensation. This has been done in cellar wintering (1) by raising the temperature of the outer air, (2) by drying the air (as by the use of unslaked lime in the cellar) or (3) by causing the air to move so that as the atmosphere becomes laden with moisture it is replaced with other air capable of taking up more moisture.

To determine by weight the actual amount of water in the atmosphere is difficult in ordinary practice and the usual method is to determine the relative humidity, that is the amount of moisture in the atmosphere compared with the maximum which might be held at that temperature. The common method is by the use of the wet and dry bulb thermometers, to determine how much the wet bulb is cooled by evaporation. Then from this data the relative humidity is obtained from prepared tables.

To make clear the relation of the relative humidity to temperature it may be well to choose a few examples. For the first case, there may be assumed a cluster temperature of 60° F. (barometer, 30 in.) in an atmosphere which is fully saturated. In this event the slightest cooling will cause condensation and the wet bulb in such an atmosphere (if it could be circulated rapidly) would show no cooling. No evaporation can occur as the atmosphere cannot take up any more moisture. If, however, the wet bulb can be cooled at this temperature the relative humidity is less as the readings of the wet bulb thermometer are lowered. The temperature to which an atmosphere must be cooled to produce condensation is known as the "dew-point." This is also lowered as the humidity decreases These points are illustrated in the accompanying table:

Assumed cluster temperatures		Dew point	Relative humidity
Dry bulb	Wet bulb		
60° F.	60° F.	60° F.	100 per cent.
60° F.	58° F.	57° F.	89 per cent.
60° F.	56° F.	53° F.	78 per cent.
60° F.	54° F.	49° F.	68 per cent.
60° F.	52° F.	45° F.	58 per cent.
60° F.	50° F.	40° F.	48 per cent.
60° F.	48° F.	35° F.	39 per cent.

With such an assumed temperature of the cluster (60° F.) only the highest relative humidities would show condensation in an atmosphere in which such a cluster temperature would be found, for such a cluster temperature could occur only when the external temperature is above 57° F.

If different temperatures are assumed for the cluster (all of which have been observed under different conditions by various investigators) the relative humidity of the warmer atmosphere which will show no condensation when cooled to cellar temperature is given in the following table, (barometer, 30 in.):

Assumed cluster temperatures		Dew point	Relative humidity
Dry bulb	Wet bulb		
60° F.	52° F.	45° F.	58 per cent.
65° F.	54° F.	45° F.	48 per cent.
75° F.	58.5° F.	46° F.	35 per cent.
96° F.	66° F.	45° F.	18 per cent.

In this second table the numbers are chosen so that the dew-point is practically 45° F. in all cases, assumed as an average cellar temperature. It appears that a given amount of water given off by bees at 96° F. creates a much lower relative humidity (18 per cent) than the same quantity of water at 60° F. (58 per cent) because the warmer atmosphere is capable of holding more water vapor and relative humidity is simply an expression of the percentage present compared with all that the atmosphere can hold. However to maintain a temperature of 96° F. necessitates the consumption of much more honey and this in turn gives off much more water vapor. Consequently with a cellar temperature of 45° F. we should expect much more condensation in a colony with a cluster temperature of 96° F. than in one with a cluster temperature of only 65° F., except that the increased heat would tend to produce stronger currents of air in the hive which might relieve the situation somewhat. Since 96° F. is about brood rearing temperature it is partly indicated why brood rearing during the winter confinement may be highly injurious, as it is usually held to be. It may be stated that a cellar temperature of 45° F. and a cluster temperature of 60° F. might not occur; the other temperatures used in the table might well occur under different conditions.

In making determinations of relative humidity it is necessary to take into account the barometric pressure but in any given locality the changes of the barometer are so small as to be negligible and therefore need not be discussed here. In any event in using wet and dry bulb thermometers the conversion table used must be for the right barometric pressure.

A further word of warning concerning the use of wet and dry bulb thermometers may not be amiss. To obtain accurate results the air must be moving past the bulbs at the minimum rate of 15 feet per second and if this is not occurring naturally the thermometers must be whirled at a corresponding rate. Unless this is done the readings are entirely worthless. Great care must be taken not to read the wet bulb thermometer until it registers as low as it will fall. It is therefore obvious that wet and dry bulb thermometers hung in the bee cellar and not whirled give no reliable data as to the relative humidity of the cellar. Many beekeepers thus use them incorrectly.

HOW MOISTURE ESCAPES FROM THE HIVE IN WINTER.

During the summer when nectar is being ripened into honey, great quantities of water leave the hive in the form of water vapor. During this period the hive is being well ventilated by fanning bees so that the atmosphere is changed rapidly and, being warm, is capable of taking up more moisture than is the atmosphere of the bee cellar. In winter when the bees are in a cluster this ventilation by fanning does not occur. The amount of water that must leave the hive is much less than in summer, but on the other hand it either must pass out in air set in motion by changes in temperature, or will condense on the frames, combs and hive and possibly run out of gravity.

If the atmosphere of the bee cellar is heavily charged with water vapor, as is frequently the case, that within the hive must be saturated. The additional water produced by the bees will therefore condense and run out the entrance. It frequently happens that the air inside is saturated while that outside is capable of taking up this moisture again by evaporation, so that there may be no water visible except within the hive, most often on the cover, and possibly also on the bottom board.

If the wooden cover of the hive is loose or if the hive is covered with some absorbent or porous material, the heat escaping from the cluster may cause the formation of slight upward air currents which will carry the moisture out the top in the form of vapor. Out of doors there may be condensation of moisture in the porous packing more rapidly than it can be carried off by evaporation, in which case the packing becomes wet and usually thereby less effective as a non-conductor of heat. With sealed covers the moisture must pass out the entrance and this may also occur in the form of vapor if the outer air is of sufficiently low relative humidity to take up all the water as it comes outside.

One of the much discussed questions among beekeepers is whether it is better to have the wooden cover of the hive sealed tightly by the bees with propolis or whether the replacing of the cover with an absorbent cushion to take up the moisture does not keep the colony in better condition. The usual method of providing upward ventilation is to place several thicknesses of absorbent cloth or other absorbent material over the frames, over which is placed suitable packing material. Out of doors care must be taken to have the cover water proof so that the packing and absorbent material will not become wet from rain or snow. Another method used to a considerable extent in New York State is to have a small hole in the front of the hive through which the moisture laden air may escape.

If the temperature of the inside of the hive, not in the cluster, is low and the humidity of the air which escapes from the cluster is high, this moisture will not escape from the entrance without condensation. In such a combination of circumstances it is obviously advantageous to provide an avenue of escape. This the upward ventilation and absorbent cover does. The late W. Z. Hutchinson, who had unexcelled opportunities for studying bees in winter in North Michigan, says: "Those beekeepers who have been the most successful in wintering their bees out of doors in the higher latitudes have, so far as I know, given upward ventilation through some kind of packing material." Coggshall refers to the severe winter of 1880 when in his region (Groton, N. Y.) the temperature remained below 0.0° F. for three weeks in January. Three-fourths of the bees in New York died and he lost half of his. Those saved had been packed with burlap or carpet over the frames over which was four to six inches of dry sawdust. Bees in box hives died unless the boxes had a hole for flight half way up or were cracked so that moisture could escape.

On the other hand it is frequently observed that colonies in box hives sealed inside by the bees often winter better than colonies in hives with movable frames carefully packed. The majority of box hives are much higher than they are wide. This enables the bees, by going toward the top to keep the temperature of the combs about them high enough so that moisture does not condense and furthermore there are frequently cracks to allow the escape of moisture.

In situations where the temperature of the combs and hive does not often reach the point of condensation, or if a low temperature is prevented by packing, a tightly sealed cover can do no harm and many beekeepers report success in wintering bees in such conditions. The attributing of differences in manipulation and methods to "locality" has been greatly overdone by beekeepers, particularly since they usually do not describe the characteristics of the locality or analyze their conditions to determine why certain things prove best. This peculiarity in the beekeeping literature is probably largely to blame for the discussions on the virtues of upward ventilation. It should be borne in mind, however, that while sealed covers may be harmful in colder regions, upward ventilation is not objectionable in warmer regions. A careful study of the methods employed by the beekeepers who winter their bees most successfully would probably show that the quotation given above from Hutchinson is correct.

EFFECT ON THE HUMIDITY OF CHANGING THE OUTSIDE TEMPERATURE.

Any change in the temperature of the bee cellar may affect the humidity of the air in the hive in two ways. As the optimum cellar temperature is approached, the heat produced by a normal colony will diminish and this decreases the food consumed and consequently the water produced. The widely varying reports of the food consumed by bees in cellars find their explanation chiefly in the difference in the temperature of the cluster. As the cellar is cooled below the optimum not only is there more water produced, but the cooler atmosphere is incapable of holding so much and there is therefore an augmented cause for condensation.

In this connection it may be of interest to record a few observations made by one of the authors on bee cellars not long since. The first cellar was away from any house, was ventilated by the sub-earth system and was without any artificial heat. The temperature of the air at the floor was 40° F. and in the center of the cellar 41° F. There was little circulation of air and moisture had condensed freely in the chamber above the cellar proper, under the roof. In this cellar were 98 colonies in 24 stacks. Of these, condensed moisture was seen on the bottom boards of 21 in the bottom tier, 11 in the next tier, 3 in the third and 6 in the top tier. There was no condensed moisture on the floor. The only adequate explanation for the greater number of wet colonies in the lower tiers is the slightly lower temperature at the floor. If now there had been more ventilation provided without greatly lowering the cellar temperature, this moisture might at least have reached the chamber above the cellar before condensing, and doubtless if the temperature could have been raised a couple of degrees all of the condensed moisture would have disappeared from the bottom boards. There might still have been condensation on the covers. where it first appears, but this, too, would doubtless have evaporated at 45° F. with good ventilation.

In a second cellar where the temperature was 45.5° F at the floor and 50° F. six and one-half feet from the floor, there was no condensed moisture in any of the 93 colonies. Here the ventilation was much more abundant and the cellar was artificially heated. In a third cellar, temperature 40° F. five feet from the floor, there was moisture on several covers but none on the bottom boards. The ventilation was excellent. In a fourth cellar, temperature 52.5° F., no condensation was observed even on the covers. It therefore appears from these few observations that in the two cellars at 40° F. the moisture was more in evidence in the poorly ventilated cellar and that when the temperature was raised to 45.5° or 52.5° F. no condensation occurred. In this connection it should be remembered that the cellar temperature is often higher than that of the outer air, thus giving the atmosphere a greater capacity for water vapor. For example, if air comes from the outside at 0.0° F. into a cellar where it is warmed to 45° F. its capacity for moisture is increased thereby almost eight times (barometer, 30 in.) so that even if the atmosphere at 0° F. is saturated, it is capable of taking up much more moisture when it reaches the cellar temperature. Moist air passing from the cellar will often cause frost to form about the ventilating holes.

The only conclusions that can safely be made from the data on these four cellars is that concerning the capacity of the atmosphere for water at different temperatures. Other factors entered into the wintering of bees in these four cellars so that probably no reliable conclusions could be formed from data as to the food consumed by the various colonies, even if these were available.

In discussing the condensation of moisture in the hive and the various methods by which it may be avoided, one must not lose sight of the fact that little is definitely known as to the effects of such condensation or of a high relative humidity on the wintering of bees. From the experience of numerous beekeepers there is justification for concluding that bees winter better in the dryer cellars, but it is not so clear whether this statement would hold true for all cellar temperatures. In most systems of cellar ventilation the object accomplished is not so much to provide oxygen for the bees as to eliminate the exhaled moisture without too great condensation. The amount of oxygen needed to oxidize a couple of pounds of honey per month is not great. Even in a cellar in which a ton of honey is consumed during the winter, as in the theoretical case cited, sufficient oxygen would probably get in without any special provision for ventilation. This is not true for the elimination of the water, however.

In discussing the exclusion of moisture from the hive it is necessary to bear in mind one other hiding place for moisture, usually overlooked. In hives where condensation is common the hive and cover often become saturated and sufficient moisture may be held in this way that it comes through and blisters the paint on the outside surface of the hive. It is clear that on account of this absorption of water by the hive many records of weights on the removal of bees from the cellar fail to give accurately the loss in weight by the consumption of honey and the death of bees. Much honey finds its equivalent in the water in the soaked hive. Before drawing any conclusion as to the honey consumed we must be sure that condensation or evaporation do not affect the weights of parts assumed to be constant. A reverse example of this phenomenon is to be found in some records made of the weight of a hive and combs (without bees) made recently. The hive lost weight constantly by evaporation when placed in a dry room.

EFFECTS OF HUMIDITY.

It may as well be stated that we have no data showing the effects of an increase or decrease in the relative humidity on the activities of the bees in winter. We therefore do not know what relative humidity is best, for we do not know whether the moisture is the cause or the effect of poor wintering. From practical experience it may be concluded that excessive condensation is indicative of poor wintering and most beekeepers aim to have their cellars as dry as practical. Whether this is desirable for the warmer cellars remains to be determined.

Government apiary and laboratory at Washington.

Elwood falls into a common error, in which he is probably accompanied by many beekeepers, when he states that a damp cellar at 45° to 50° F. is no warmer than a dry cellar at 38° to 40° F. This conception arises from our personal experience that high relative humidity gives us a feeling of chill. There is no evidence that bees with very different exteriors are so affected.

At any rate it is evident that condensation of moisture on the combs of honey is not beneficial since this favors the growth of molds. The damp dark interior of the hive is certainly favorable for the growth of these organisms. It is not yet shown how these are injurious but they can scarcely be assumed to be desirable as food. A still more serious consideration is the fact that honey tends to take up moisture either from a highly saturated atmosphere or from water condensed on the surface of the comb. This dilution of the honey often leads to some fermentation, injuring the honey as a food.

A discussion of the humidity conditions in the hive would be incomplete without mention of the work of Parhon. This author attempts to determine the physiological phenomena of the bees during the four seasons of the year. The bees under investigation were obviously abnormal and it is a matter of serious doubt whether her results are of value. She found that the water content of bees in winter was 74.82 per cent and in summer 71.44 per cent, which difference is assumed to be advantageous to the bees in withstanding cold by conserving the heat necessary to evaporate this slight amount of water. No data are given concerning the humidity of the atmosphere in the hive which might throw light on the differences observed. It is claimed that the respiratory changes in the bee are greater than in any other animal investigated, and this is attributed to the colonial life, but why this makes any difference is not made clear.

WINTERING BEES IN IOWA.

W. S. PANGBURN, CENTER JUNCTION.

Friends, in one sense my subject is well chosen as I never wintered a colony of bees outside of Iowa in my life. In another sense I am not the man for the subject. The one to do the subject justice should be able to handle both outside and cellar wintering. Having never wintered a colony of bees outside of a cellar I am not capable of giving you anything from that point of view.

Mark Twain said "he always liked to talk about things he knew nothing about because he wasn't hampered with facts."

It is evident in my mind Mark never talked before a beekeepers' convention or wrote for a bee journal. If he had he would have become acquainted with a lot of mighty fine fellows, and would have been hampered with something worse than facts.

I don't know who put me on for this subject, but I suppose our modest President, Mr. Pellett.

The fellow who writes "beekeepers I have known"—you who have had your biographies written up by him know—well, he reminds me of a little dialogue that took place between Johnnie and his mother. Jimmie Jones had just moved to town and Johnnie had gotten pretty thick with him. Everything was Jimmy Jones. Johnnie's mother, who was very particular what sort of company Johnnie kept, as all mothers should be, asked Johnnie one day what kind of a boy this Jimmie Jones was. Johnnie straightened up and says: "Well, I'll tell you, mother. He's no angel; that isn't his profession. But he's all right."

I am simply giving you 11 years of experience and observation in wintering bees in the cellar. I leave you to judge as to whether it has been successful or not.

I don't know that my cellar has any marked peculiarities different from lots of cellars. It is located under one part of our dwelling and is 16x22x6½ inside measurements. Located on a hill with good drainage, plastered walls and cement floor. It has always been dry. Two 3-light sash, one in the southwest and one in the southeast corner of cellar, with an outside door in the center of the east side for carrying the bees in and out. There is nothing uncommon about the cellar. In fact, when the cellar was dug 20 years ago I had no idea of ever owning a bee.

When we had our kitchen and living room over this cellar with two stoves going most of the time in the winter, the temperature rarely varied over 2 degrees in any reasonable weather. The thermometer registered 45 to 47° most of the time. Two years ago we remodeled our home and moved kitchen and dining room to another part of the house, leaving but one stove over the cellar, and it not going very regularly.

Home of W. S. Pangburn.

Since that time the temperature ranges from 40 to 45°, about 43 on an average, I should judge. Still I can't see but what the bees winter just as well as they did before. But there was more moisture in the hives which had to be gotten rid of which I did by removing the piece of section over the hole in the inner cover and placing a sheet of muslin under the covers. It had its objections, however, as the bees ate holes (in some this winter as I think it better. But like Dr. Miller, "I don't know;" will know later. The muslin cloth does very well if you use a heavy grade. cases) in the muslin, especially the thin grade. I expect to use flax board

I use a ⅞-in. entrance winter and summer. I tier hives up in the cellar five high with outside covers off. Back of hive a little higher than front and the tiers about 4-in. apart. I leave an alley way of about 2 ft. between rows so I can examine them at any time and note their conditions. Rows are put in facing each other which darkens the entrances of both rows, so if I wish to ventilate I can without the little light that might show disturbing the bees. If the weather is mild, I ventilate often. In fact, one of the windows is left open whenever the weather will permit. I usually hang a gunny sack over it to exclude the most of the light. I often open outside door and window in the evening and let in copious supplies of fresh, pure air in mild weather.

I am satisfied right here is the cause of lots of failures in cellar wintering. People should have pure air to be healthy. Are bees unlike people in this respect? Doesn't hygiene teach that pure air is easier and quicker warmed than impure? Then why not ventilate? I never could understand why the temperature should be so exact in a cellar, when bees wintered outside are subjected to more changes in temperature than any cellar wintered bees could possibly be. From 60 above to 20 below zero is not uncommon in Iowa, and that inside of 24 hours sometimes.

If fresh, pure air will winter bees out of doors with the different changes of temperature, I don't see why it isn't a mighty good thing in a bee cellar, even if the temperature goes down to 40° or some less.

I would rather have a cellar with a temperatur of 40° and pure air than one with the orthodox 47° and impure air.

I don't take so much stock in that 47° business as I used to, or perhaps I should say I don't pay so much attention to it. It worried me a good deal when I first commenced keeping bees.

I am satisfied that statement "If you can't keep your cellar at 47° or close to it, better winter out of doors," has caused many an amateur to chink up his cellar, compel his bees to try to live on that foul poison air, just to mantain that 47°, then to wonder in the spring what killed his bees—of course it was cellar wintering.

Now don't understand me to be knocking against the orthodox 47°. Because I like to have it, if I can, and have pure air. However, my bees seem to be in a more normal condition at 40 or 45. But if I have to lower that temperature to have pure air, down she goes.

I use my nose in a bee cellar fully as much as the thermometer. In fact, I haven't had a thermometer in my cellar to my knowledge for three years.

I have wintered 100 per cent several times in this cellar and don't remember of carrying out over eight dead colonies in any one winter, and that year we got honey dew in the winter stores. The only year I ever knew my bees to gather honey dew. However, they gathered some from the maples in early summer this year and I had two reports of bees working on the spruce. I imagine spruce honey dew would be fine dope. It might do to compete with some of this imported honey that is selling at three cents per pound.

We have wintered as high as 116 swarms in this cellar besides all our vegetables and canned fruits. Perhaps an average of 75 swarms for the past 10 years. I have never kept an exact account of the per cent of loss, but don't think it would average more than from 3 to 5 per cent in normal colonies.

I never could understand why a good dry cellar with plenty of pure air and the bees with plenty of good stores wouldn't winter bees successfully, but seemingly some don't.

Before I close my subject I wish to mention one thing that is of vital importance to cellar wintered bees, and that is don't put the bees out too early in the spring. Here is where lots of the so-called cellar losses come in.

Pangburn Apiary.

You hear a good deal about spring dwindling. Personally, I don't think I have had bother enough with that to mention it. I think there is a remedy for most of this trouble and it is left for the beekeeper to apply.

I never put my bees out of the cellar until the soft maples are in bloom *a la* Miller. This year it was the 13th of April, soft maple froze on the trees and gone when bees went out. Bees never went out in finer condition. But they had all the fresh air I could get into the cellar in the spring.

No use to set bees out of the cellar in March when weather is changeable and nothing to do. It is mighty hard on cellar wintered bees. They will get out on days not fit, chill, and never get back to the hive.

I want plenty, yes, plenty of honey and pollen in the hives early in the spring so the bees never feel skimped. I want them to feel as Brother Doolittle says, "millions of honey at our house," and brood rearing can go on unhindered, and replenish the hive with young bees just as soon as possible to take the place of the old ones that die off. If brood rearing is hindered early in the spring the results are a lot of weak colonies. The old bees will die and they die mighty fast in the spring too. It takes bees to make honey and also honey to make bees. If your colony hasn't got the honey give it to them if you ever hope to get any surplus. Do not kill the goose that lays the golden egg.

Beekeeping is made up of little details and the beekeeper who pays attention to the little details at the proper time is the man who gets a crop of honey *if* there is any to get.

FIFTY YEARS OF BEEKEEPING IN IOWA.

EDWARD KRETCHMER, COUNCIL BLUFFS.

I hastily will give a few reminiscences on the subject assigned me, namely—"Fifty Years of Beekeeping in Iowa." In order to make the matter a little more complete, I have to go back to the year of 1860 when Mr. Parson of Flushing, Long Island, brought the first Italian bees to the United States. It was in the fall of that year when I obtained the first queen of Italian bees that crossed the Mississippi, and as such the first Italian bees in the state of Iowa.

From this queen, several queens were raised the next year until the writer entered the service of the United States, and during his absence, his father sold the original colony to W. H. Furman of Cedar Rapids, Iowa, who then owned the patent for the Langstroth hive for the state of Iowa. On my return from the service I again purchased a colony of Italian bees from Mr. Furman, and again entered actively into beekeeping in the state of Iowa.

During the Iowa State Fair the writer showed to a vendor of so-called bee charmer that bees could be handled with a little smoke, creating quite a sensation on the fair ground, which was exaggerated by newspaper reporters, resulting, however, in numerous inquiries as to his manner of handling bees, and was soon followed by a demand and description of his hive.

In order to more fully outline my method of handling, I wrote a small pamphlet entitled "Winke fur Bienen Zuchter," followed by an English edition "Intimation to Beekeepers," followed by "The Beekeepers' Guide," a small volume of 244 pages, and two years later another book entitled "The American Beekeepers' Guide," of a slightly larger edition.

About that time much was said about the Langstroth frame being too shallow for our Iowa climate, and to settle this question a number of the enthusiastic beekeepers met in Des Moines, at which meeting there were present Suel Foster of Muscatine, Dr. Elisha Gallup of Orchard, Iowa, and Ellen S. Tupper of Washington, Iowa, myself, and a number of others whose names I can not now recall.

At the meeting the subject of a frame suitable for our northern climate was discussed at some length, and the sense of the meeting seemed to be for a frame whose outside dimension should be twelve inches square, and be known as the American frame. A number present who favored that size made the remark in substance as follows:

"I have several hundred combs and Langstroth frames. What shall I do with those combs to change to the American frame, and not sustain material loss?"

It should be remembered that at that time comb foundation was not to be had. Consequently, every scrap of comb was carefully used; hence, the desire on the part of some not to change from the combs then in use. But in order to yield to the demand for the hives, the writer manufactured what was then known as the Champion Hive, and later the Alternating Hive, a horizontal divisible brood chamber hive, also the Langstroth Hives.

The aforementioned Furman of Cedar Rapids, Iowa, was then selling the Langstroth hive already nailed and painted, from wagons traveling over the state, which necessarily made those hives expensive, and a demand sprung up for a cheaper hive. To gratify this demand, we manufactured for a while a so-called "Plain Hive," which is today practically the same hive with the dovetailed or lock corners. About this time the writer in reading a German bee journal saw the description of the centrifugal force honey extractor, as invented by Major Hursky. I long pondered on a process of extracting the honey from the comb and saving the comb. As is already mentioned, combs were considered a very valuable adjunct to practical beekeeping, and even the present day I have to smile at the numerous attempts to extract honey by air pressure, suction, etc. But as soon as I learned of the use of centrifugal force to extract honey from the combs, I instantly saw the requirement necessary to accomplish the result.

I then at once used the tall tub constructed with wooden reel surrounded with common wire cloth, and in the absence of a gear, I wound around the center post a stout string and used the center reel to revolve the center wheel, like a boy would use a string on a top. Although decidedly crude as compared with the present extractors, it did extract the honey from the comb, and as far as we know, this probably was the first honey extractor manufactured in the state of Iowa, if not in the United States.

At that time, in the early '70's, we still had to depend mainly on the wild flowers of the prairies and the wild fruit bloom for our supply of honey. Goldenrod at that time furnished an abundance of fall honey, and the writer with one assistant did actually extract 3,000 lbs. of goldenrod honey in a single day of a consistency so thick that a common table knife would stand upright in a bowl of this goldenrod honey.

Honey crop at that time was very spasmodic, and I kept a record, not only of the product of every colony, but also the various yields during one year and successive years, and one record shows that for four successive years the average for those four years did not exceed ten pounds of surplus honey, and the fifth year following, owing to very late summer and fall rains, we had an abundant yield of goldenrod and heartsease honey, and the yield exceeded 400 lbs. extracted honey, so that even after a failure of four years, we get an average yield of about 90 lbs. for the five years.

I presume that Iowa may take the credit of being the first to ship queens by mail any great distance. From my record it appears that in 1866 we shipped queens to Stockton, California, a greater distance of which was by the so-called pony mail. For this purpose the writer obtained a patent for the mailing cage, consisting of a drum shaped cage of wire cloth, in which was suspended a small frame which contained comb, which would hang perpendicular regardless of what shape the cage might be placed. At that time it was believed that bees could only be shipped on combs, which must always be perpendicular.

During the World's Fair in Chicago, 1893, the writer had charge of the Iowa honey exhibit, where over 12,000 pounds of honey at various times was displayed, and seven different persons received awards, including a medal and diploma awarded to the writer for extracted and comb honey. Among the comb honey exhibits were the words "Iowa Honey" built by the bees in letters six inches high, which attracted an unusual amount of attention, as also did the curved nozzle smoker and the horizontal divisible brood chamber hive.

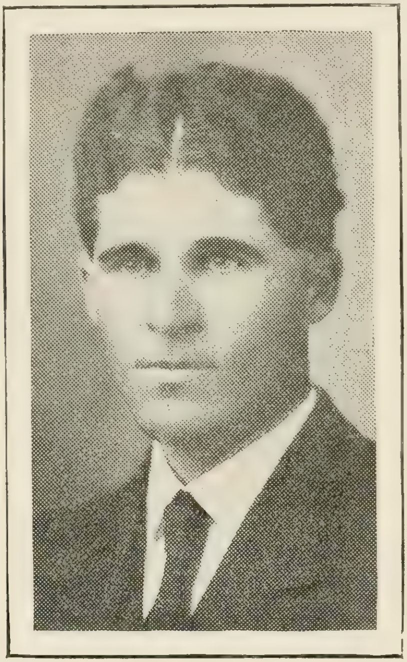
In 1875, I think, we organized the first Iowa Beekeepers' Association, with the writer elected as president, but at that time the professional beekeepers, or beekeepers who kept a large number of colonies were very few—hence, the attendance was very limited. Farmers who had only a few colonies could not be induced to attend, and after holding two meetings, it was decided that the organization was premature, and the subject matter was dropped. But now I am glad to know a rousing Beekeepers' Association has been formed, and trust will be continued—and now I can only repeat my regret of inability to be present, but trust that I may have the pleasure of meeting the members at future meetings.

INDIVIDUAL AND CO-OPERATIVE METHODS OF MARKETING HONEY.

WESLEY FOSTER, BOULDER, COLORADO.

We must get as direct and short a line to the consumer as possible. If we cannot get such a line we find that the profits in honey production are microscopic except in the best of years. We can view our situation perhaps with more calmness than the fruit growers or potato growers who often have such a poor market that the fruit is left unpicked or the potatoes undug. Our crop will keep and it always pays to get the surplus off the hives though the market may be slow.

It is probably true that the marketing question troubles the majority of beekeepers very little. In 1913 the clover crop was very large and market conditions were decidedly off, but this year the market has been better in some respects and poorer in others. Comb honey has been in good demand and fair prices have been easily secured for well put up stock. Extracted honey has been slower sale and it is with extracted honey that we should more urgently work the markets. About all marketable comb honey needs is to be shown, to be sold, while extracted honey has to be pushed and its deliciousness demonstrated.



Wesley Foster.

ONE INDIVIDUAL PLAN THAT WORKED.

In 1913 I had 800 cases of comb honey and about 5,000 pounds of extracted honey. My brother had about 500 cases and perhaps 2,000 pounds of extracted honey. We went in as partners in selling some of our comb and extracted honey that at the time was slow sale. We employed a gentleman who had had some experience in selling goods and also had worked for us with the bees for several weeks to go on the road with samples and sell honey. He had a fair knowledge of our methods of producing honey and so could talk bees pretty well. We paid him $12 a week and expenses and he carried a side line which probably brought his weekly earnings up to about twenty dollars a week, for the time he was out for us, which was about three weeks. It was a short campaign for the reason that the territory which can be profitably worked from our location is limited in extent and the time that profitable business can be secured is also limited to a few weeks in early fall.

The cost of the three weeks' campaign was about ninety dollars and the amount of orders secured that were filled and collected for were over $900. The price secured for comb and extracted honey by this method of sale was more than ten per cent above the price we got by selling wholesale. There was more work attached to crating and shipping the honey, sending out bills, etc.

All orders were taken subject to two weeks' shipment. This gave us time to ascertain the reliability of the parties making the purchases. As the orders came in we took them to our bank and the bank wrote to its correspondent in the town where the orders came from as to the responsibility of each party. This cost us nothing except postage of about a dollar. All orders reported to us as good by the banks were shipped on thirty days' time or two per cent off for cash in ten days. Those reported doubtful or slow were written that if they wanted the honey we would ship C. O. D. Every one such was turned down or we did not hear from them again. In this way we cancelled a number of orders. One order was shipped C. O. D. without writing the party and we had it turned down, so had it shipped on a few miles farther to another customer.

I think where a bank will perform this service for you it is far more reliable than the commercial agencies. One bank is very careful about reporting a doubtful party as O. K. to their correspondent bank.

Something over fifty orders were received and filled and all were collected for inside of ninety days except one which was put in the hands of an attorney, one letter from him bringing a check in full payment within a week. The attorney's fee was $2.00 for collecting this bill of about $25.00.

All bills that were not paid promptly in thirty days were drawn on through our bank. This procedure brought the money in every case except the one mentioned, which required the services of an attorney. Several customers wrote that crops had been poor and collections slow and asked a little more time, which was given, but all were settled for in less than four months from the time we began shipping honey.

If the beekeeper is adapted to the work of selling honey he should, if favorably located, be able to place a good proportion of his crop direct to the grocers. We sold honey to restaurants, hotels and farmers where an order of $6.00 or more could be secured. Our salesman was alert and would not turn down business no matter where from.

Especial care was taken in packing the comb honey and liquid honey for shipment as the grocers told us that their great difficulty in buying honey of the commission men was the broken and leaky shape in which the honey was received. All comb honey was crated in carrier crates holding four to eight cases with plenty of straw on all sides.

Glass jars of honey were packed in like manner and I do not recall a single case of breakage being reported.

The disadvantages of this method are that it may not pay every season, if the grocers get stocked up before you get to them and it takes considerable time in preparing the honey for shipment as grocers want extracted honey in glass and several sizes of tin packages which makes the filling of orders rather tedious and fussy work unless you are well equipped for it. The letter writing and making out bills, bookkeeping, etc., is considerable. It could not be done by the beekeeper unless he has his beework out of his way and can devote most of his time to the selling and shipping.

THE CO-OPERATIVE PLAN THAT WORKS.

I have sold my honey in large part through our Colorado Honey Producers' Association for a number of years and with satisfactory results. No fussing with little orders or much bookkeeping, for the association, comprised of between two and three hundred stockholders, has a manager, bookkeeper, stenographer, etc., to look after that.

All I have to do is to pack and mark my honey according to the rules of the organization and either ship it in car lots with other members from Boulder or ship it to Denver where the main office is located and have it handled from there. If the car is loaded in Boulder, the manager or his representative is present to inspect the honey and superintend the loading.

An advance is made to the beekeeper, if he needs it, on the day the honey is shipped and remittance in full, less commission, comes in ten days to three weeks.

This marketing through the association cuts out the fuss and worry over small details. The beekeepers have grown so used to selling in large lots that many do not want customers coming to their homes for honey at all—they do not solicit such business. It is an aggravation to have to stop one's work and show a customer around for ten or fifteen minutes and then only sell him one or more pounds of honey, especially if one is busy.

The prices secured for comb honey through the association are often higher than the local grocers will pay in small one to five-case lots. The association has a market that is little affected by the farmer-beekeepers' honey of uncertain quality and grading. Numerous have been the times that we association members would be loading out a car of comb honey at $3.00 a case for No. 1 when the grocers would pay but $2.50 to $2.75 for honey in small lots, and then the grocers want you to trade all or part of it out in goods.

Personally, I like the co-operative method best, but the direct-to-the-grocer selling is good in an emergency or where one is located favorably and has the qualifications for successfully handling the business end of such a deal.

Following Mr. Foster's paper on marketing honey, the discussion was opened by Mr. P. J. Doll of Minneapolis, Minnesota, who spoke as follows:

I have attended bee-keepers' meetings for fourteen years, and at nearly every one I have heard a paper or discussion on marketing of honey. Everybody agrees that the price of honey is much too low and that the commission house man is not working to the interest of the bee-keepers. The bee-keeper who can market his honey in his home town is not subject to the abuses of the commission house business, but many bee-keepers are compelled to find a market in the larger cities.

It was for the benefit of this class of bee-keepers that the Minnesota Bee-keepers' Association took action to organize a honey exchange in Minneapolis, whose object and purpose is to buy and sell honey; to help the bee-keepers in Minnesota, Iowa and Wisconsin market their product at a fair and uniform price, and to advertise to the public the fact that clover and basswood honey produced in Minnesota, Iowa and Wisconsin is the finest honey on earth. After it is once generally known that our honey is finer, we can easily obtain a higher price, because honey produced in this section is of finer flavor, but it does not always follow that *all* honey produced is of the highest quality.

Some of the plants growing in these states yield honey which is very distasteful. Some bee-keepers even extract basswood and clover honey before it is ripe, sell this in a fermented state to dealers and consumers in large cities as pure clover or basswood honey. The innocent public who get this kind of honey decide that they do not like honey and, as a rule, cannot be induced to taste it again. We, therefore, must try to educate the public to know that there is a difference in honey, no matter where it is produced, the same as there is good or poor butter or any other staple product.

This Honey Exchange does not only handle fine honey which is carefully graded and sold under their brand as table honey, but aims to serve the bee-keepers who have off-flavored or unripe honey which must be sold. This is disposed of where it will do no harm to the honey trade. In Minneapolis and St. Paul there are many places where honey is wanted regardless of flavor. In fact, you can sell anything if you know how to find a party who wants the article you have to sell.

One of our best stores is glad to get all of our fancy comb honey, and pay 20 cents per pound for it. They will not buy from ordinary, small bee-keepers, because they do not want to bother with inspecting the goods and depend on getting what they order. A lot of stores want No. 1 honey. There is no inducement at all to offer fancy because their trade does not demand it. Other stores are satisfied with No. 2, and even some are glad to buy No. 3.

Very much the same can be said about extract honey. Besides wanting different flavors, stores require different size packages. Many handle only quart bottles, others pint bottles, some five and ten pound pails, and many will handle only tumblers.

The bee-keepers in and around Minneapolis, realizing the difficulty of marketing their product to the best advantage, decided to find a remedy, so on May 20, 1914, a meeting was held at which the Tri-State Honey Exchange was established. Among the members are many prominent bee-keepers, some having one hundred colonies or more, who have successfully marketed their honey at very good prices in Minneapolis for years, but they realized that it takes considerable time to handle their product and decided they would rather hire somebody to do it for them, so they all joined together and, in this way, were able to hire a good salesman and keep him in a permanent position where he can do business with all the bee-keepers who wish to market their honey in this way.

The Tri-State Honey Exchange is a co-operative stock company, to which over thirty members have subscribed for one share, each costing $10.00. No member is allowed to have more than one vote. We want to get as many bee-keepers as possible to join as stock-holders, but we are doing business with anybody who is producing honey in Minnesota, Iowa or Wisconsin, on exactly the same terms and everybody will receive the same treatment. This is not a money-making institution and we must buy our honey at a very low price to eliminate all chances of loss.

Our manager, of course, will try to realize as much for his goods as possible, but at the end of the year we return eighty per cent of all the profit to the people who have furnished the honey. The stock-holders who have helped establish this business will receive only ten per cent of the profit and the balance is to be retained as a surplus and will be used to buy equipment.

This association, if managed right, will eventually become a big institution and have a good influence in maintaining fair and uniform prices for honey. We, at the present time, find many localities where honey is sold at $1.00 per gallon, or 8½ cents per pound, at retail. I know several men who claim that all their extract honey sells at 25 cents per pound. Why should there be so much difference, sometimes in one county, for honey of the same quality?

Let us all help make this Exchange a success so we may all reap the benefit and work together for the good of the community.

We want to help and encourage every large commercial center organize a honey exchange. These exchanges can then organize and work together, so when there is a failure of a crop in one section they can procure from a section where there is a surplus. It will be to the best interest of the bee-keepers to have an established trade always supplied.

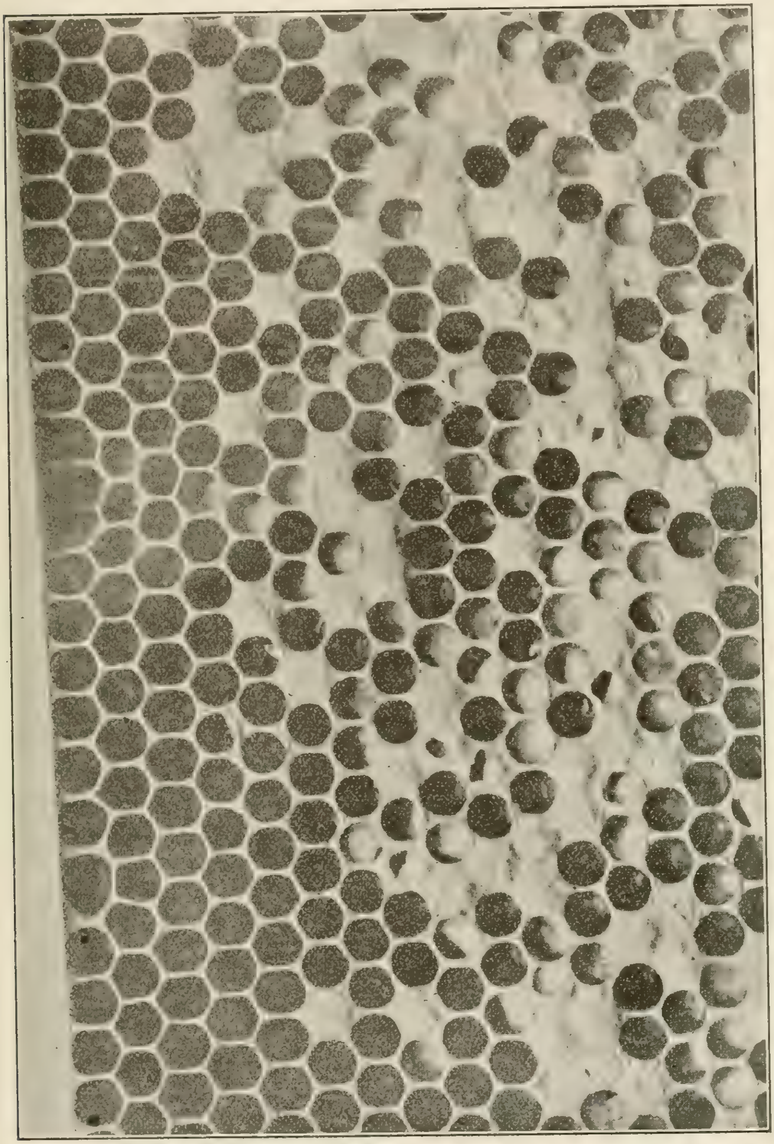
EXPERIENCE WITH EUROPEAN FOUL BROOD.

J. I. WILTSIE, ARLINGTON, IOWA.

My first experience with the disease was the summer of 1913. One of my neighbor beekeepers who lives about one-half mile west of me, came to my yard and wanted to look over some of my weak colonies, which we did, and found nothing wrong. He informed me that there was something wrong with the brood in some of his colonies. We then visited another beekeeper who lives about one mile east of me and found his bees apparently all right. We then returned and examined the diseased brood, which we decided was European Foul Brood, judging from what we had read of the disease. It showed up in a few of my weak colonies that fall. These colonies I destroyed.

The winter of 1913-14 I lost about forty colonies in the cellar, a 50 per cent loss where my loss for the winter of 1912-13 in same cellar was less than 3 per cent. The disease did not show up in the spring of 1914 until the bees had been out of the cellar about two weeks, when it spread rapidly to all of my colonies. During the meantime I had taken thirty-nine colonies on shares from my neighbor to the east of me, he having moved to Delaware county the fall before, taking twelve colonies with him. I examined the thirty-nine colonies within a day or two from the time they were taken from the cellar, they were apparently O. K. at that time, but the disease soon developed in all of them. I visited this beekeeper in Delaware county in August this year and found him with eight or ten colonies all diseased; we also visited another beekeeper in his vicinity, who had over one hundred colonies of which we examined ten or twelve and found no disease. On May 19 I went to the picnic at McGregor and succeeded in having Mr. Pellett return with me that evening. The next day we went through my colonies, caged the queens and muted them until I had but 13 colonies of my original lot remaining. I also had fifteen colonies that were apparently free from the disease, these I had bought about the first of May. Mr. Pellett inspected a number of yards in this vicinity finding one yard with all colonies diseased and one yard of twelve colonies with three diseased. On May 22 my neighbor and myself ordered eighty queens from a party in Arkansas, who kept putting us off and finally said he could not furnish them at all. On June 17 we ordered the queens from the American Bee Journal, and received them the 20th, introducing them in the same day. Our colonies having been queenless for 30 days and having given them close attention, some had reared new queens and had brood

Thirteen colonies left of 105, result of European foul brood in eight months.



Appearance of larvae affected by European foul brood. Copyright by Frank C. Pellett.

well along with the most of it diseased. All of them that had reared new queens we now shook into foundation, giving them a new queen. The ones which had not reared new queens we left on same combs. We shook our fifteen swarms we had bought on to full sheets of foundation. Finding that five or six had the disease very light, we gave all new queens. We stacked all of our combs which contained brood, diseased or not, on five of our weakest colonies which had been shaken on to foundation. We removed these combs when the brood was all out. The disease did not reappear in these colonies and they are among the best I have now. The disease did appear in some that I shook on to foundation and some that I left on their combs, destroying five of my colonies, and nine of those I had taken on shares. I now have twenty-three colonies of my own and eight of those that I took on shares left, they all seem to be in a good healthy condition. I am expecting the disease to reappear this next spring, but think I will be able to keep it under control.

EXPERIENCE WITH EUROPEAN FOUL BROOD.

L. W. ELMORE, FAIRFIELD.

The European Foul Brood proposition is a serious one, more especially to those who are unfamiliar with brood diseases. Two or three years ago I knew only a few farmer bee men who knew anything about foul brood or treatment of same. I am glad to say that in my acquaintance I have found only a few that did not want to know or make an effort to master the disease as required now by our state law. In reference to my own personal experience with European Foul Brood, allow me to say when it made an unwelcome visit to my apiary a few years ago I was prepared to meet the occasion. Knowing what I had and how to handle it I proceeded to do so at once. It being in early spring I soon had everything as good as new again; as far as my apiary was concerned, at least. But, alas—I realized my troubles had only begun—with over 100 colonies within a radius of three miles, owned by about a dozen farmers. As before stated these were people entirely unfamiliar with this disease. Just at this time it looked rather discouraging, to say the least.

As we had no foul brood law or inspector; it was up to myself alone to apprize them of the danger if I could. Well, I talked to this and that one, first inquiring about their bees getting the necessary evidence before approaching the subject. Most all had lost some bees, some had lost all they had from one cause or another. Some said the moth had eaten them up. It was very clear to me they had foul brood. I was now aware foul brood was all around me. No one making any effort to clear up the trouble. I must take my chances for better or worse and wait for results. I knew in course of time many would go out of business as bee keepers. Time drifted along for a year or two, and as expected one by one they were losing out.

All along I had many diseased colonies in my own apiary which were promptly treated. About this time, one or two having several colonies began to sit up and take notice, it dawned upon them that Elmore's Foul Brood theory was not all a myth. Our foul brood law already enacted, the inspector talked of, and 50 per cent of the bees dead, I will admit circumstances looked better to me every way. The state inspector being now appointed, at his earliest convenience he sent the deputy to Jefferson county. I being better acquainted, and having a little spare time just then, had the pleasure of going with him over part of the county on his first trip in June, 1913. We found many diseased colonies, as he left proper instruction for treatment, literature, etc., the change for the better was seen at once, only a few contrary ones refused to obey orders until forced to do so.

As I served as deputy inspector for Jefferson county this year, I had a good opportunity to see the results of our previous inspection which was generally very satisfactory. I appreciate very much the kindly feeling toward me as shown by my fellow beekeepers and friends; as it is a good natured bunch of fellows that *can* or *will* without a word of protest quit plowing or planting corn and go to the house one quarter or one-half mile with a bee inspector, it shows they are interested. Just two farmers did not have enough interest to go. Upon examination of their apiaries I found all they had were diseased.

In fact the situation is improving nicely, and the literature sent out by the department is a good educator and I can not recommend this method too highly. Let us all unite and keep the work moving on.

EXPERIENCE WITH AMERICAN FOUL BROOD.

D. E. LHOMMEDIEU, COLO, IOWA.

Mr. President, fellow beekeepers: If the program committee had assigned me the subject of "Shook Swarming," "Handling Cappings," "Starting Out Yards," or something congenial, it would have been a much pleasanter theme for me to talk upon.

About twenty years ago while attending the Seventeenth Annual State Convention at Madison, Wis., an old countryman (I think a Swede) described how he could tell if his hives had the disease. He smelled the hive entrance and if they had the disease it made him sick.

When the American Foul Brood first passed through central Iowa, all of my yards were affected about the same time, more or less badly (except one), before I knew what was the matter. Before I had gotten control of the situation I was not only sick and tired but hundreds of dollars out of pocket. While the knowledge cost high, yet I think it may be worth it.

Now all I have to do is to lift one frame from the center of the brood nest, in dandelion time, if one cell is diseased, then make a full examination and treat according to existing conditions and quarantine such hive by driving a stake in front of the hive and keeping tab until a cure is made. Some may say, "You can't quarantine bees. "Well, you will find you will need to be doctor, nurse and health officer and see that they don't go visiting into your other houses. By looking through each hive about every three weeks through the rest of the season, I have no disease to go into winter quarters, the next fruit blossom time going through each hive as in the previous season. I may find a swarm now and then that has contracted the disease from some outside source, say a few dozen cells on each frame of brood. These I remove with all other combs, leaving the bees in their old hive until all the honey they carry with them is consumed, then set a clean hive on the old stand and fill from the strongest hives in the yard. Leave brood, honey and empty combs, just about as they were before treated, then shake the bees in front of the clean hive, scald diseased hive with a teakettle of boiling water. Cut out the diseased brood and burn or bury it. If much honey is left, extract it. If you wish to feed the honey, boil thoroughly for fifteen minutes and see that every particle of the scum is cooked (before boiling dilute the honey with water), feed scum and all.

To clean the brood frames immerse in a No. 9 wash boiler in boiling water until the wax rises, being careful to dry the frames well before using again.

This plan is for spring and fall not during the regular honey flow as then you can proceed as per the (except I do not double shake) McEvoy treatment. In a day or so after giving the brood you may go through the apiary and find every swarm looking and working as if nothing had happened.

I look upon the American Foul Brood among bees to be as contagious as the smallpox among the human family, or the hoof and mouth disease among cattle. To place one diseased cell in the center of a strong colony I figure that swarm will be a dead swarm of bees in one year if left to themselves and the whole yard in a year or two more.

We need as careful laws to govern this disease as for the other contagious diseases.

The Alexander plan may work on European Foul Brood but not on a bad case of our American kind.

If through ignorance or neglect the infection becomes epidemic, move the few swarms that show no disease to another part of the yard, build, double, and even up the diseased swarms until the summer or fall flow starts, then shake on foundation starters all of the strongest colonies, catch out the queens in the weak ones and tier the brood above them four of five stories high; carry the rest of the combs to the bee house. Any of them you may experiment with, if they are clean. Melt the rest for wax. After three weeks shake these swarms, running in a good queen by the smoke plan at the same time.

In conclusion, will say to the would-be-beekeeper, get in touch with our energetic state inspector and make a date this summer some time to spend one day in a diseased yard, and learn to tell the disease when the first little, white grub begins to turn a cream color or yellow. Even if you have to pay ten dollars car fare and lose a day in the rush of the season, it will save you hundreds of dollars when the American Foul Brood reaches your locality.

DISCUSSION ON EXPERIENCES WITH AMERICAN FOUL BROOD.

J. W. STINE, STOCKPORT, IOWA.

I scarcely knew what was expected of me, whether I was to speak on my experience with American Foul Brood or whether the discussion was to be a question box. If the latter should be the desire of the convention we have present, men of authority to help answer your questions.

In our experiences in handling bees we find "knowledge is power." Especially is this true in any of the bee diseases. It is with the diseases of bees like an old colored aunty told a noted preacher who was denying the existence of the Holy Spirit. She said to him, "Dere isn't any as you knows of." So with bee diseases, some will say my bees are perfectly healthy, never have had any disease. All I ever had to die either froze to death or the moth killed them out. These excuses for bees dying are quite familiar to the inspector. Had the owner of the bees known what was the matter with them in time he would not only have saved the diseased ones but have saved other healthy ones which would turn in and rob the diseased bees of their honey.

J. W. Stine, Director, and Mrs. Stine.

One of the best ways of preventing the spread of disease is that at all times as far as possible keep all colonies from the tendency to rob. I believe the feeding of bees outside and away from the hives should be avoided. I was in one locality last spring where a man had lost all his bees with American Foul Brood, except two colonies, and had placed his empty hives containing the diseased honey outside or above his bee shed, as he said, "so the bees would clean out the honey easier." You can imagine something of the conditions in that locality. Every colony of bees for miles around was diseased. I believe the beekeepers can help themselves if they will by showing the danger of exposing honey containers so bees may reach them. For we never know where a drop or so of diseased honey is going to be exposed.

I believe another good way of preventing disease might be in introducing queens, by taking away the attendant bees from the cages before introducing the queen. I believe the introduction of the queen might also be safer in doing this, for the queen would be the only stranger among strangers and there would not be as much antagonism to the queen as though she had ten or twenty attendants.

There is no sure way of telling whether a colony has disease by outside observation except when the disease is in an advanced stage when you can plainly smell it at the entrance of the hive.

Truly the old saying is a good one to observe with bee diseases, "An ounce of prevention is worth a pound of cure."

While waiting for the adjustment of the lantern for an illustrated lecture, Mr. Dadant was called upon to tell something of his recent visit to Quebec. He spoke as follows:

TRIP THROUGH QUEBEC.

BY C. P. DADANT.

We received an invitation from the Quebec Beekeepers Association, which is composed mostly of French Canadians. We left home on the 2d of November and returned on the 15th. This gave us but a short trip, so we had time to visit only four or five of the leading apiarists. We learned a number of interesting things, but did not secure much practical information. Here are some of the interesting things.

When we arrived in the City of Quebec, we called one of the leading beekeepers on the telephone. He came with his auto and took us to visit several other beekeepers. I found that in many places they use a much larger hive than is in common use in the United States, some of their hives containing twelve and thirteen Langstroth frames.

In lower Quebec, the season is short, the crop beginning as late as the 20th of June and closing by the first of August. The Italian bees do not prove very satisfactory because of this short season and the coolness of the mornings and evenings. These bees are accustomed to rise early and retire late, in a sunny climate, and to breed too late in the season. As soon as the sun begins to warm up they breed plentifully and many bees get lost by being out too early in the day or too late at night. By the first of August, when the crop is over, the common bees prepare for winter, while the Italians continue their breeding, using up their honey, so that they have to be fed for winter, while the other bees have enough. But this was not the case all through the Province. In Western Quebec, the season is longer, there are two crops of honey, owing to the warmer climate, and the Italian bees thrive as they do in the United States. The same may be said of the Province of Ontario, where the climate is similar to that of Southern Michigan. They have also ascertained that the Italian bees overcome European Foul Brood much more readily than the common black bees. I heard numerous statements of having done away with this disease by the introduction of Italian queens.

As a matter of course, they winter their bees almost invariably in the cellar. The few cellars which I saw were very shallow and I remarked that they would be subject to great changes of temperature and would be too cold in winter. But when they told me that the snow usually covers the ground to the depth of five or six feet, I could understand that the changes of the outside temperature would have but little effect on the temperature of the cellars. One of the apiarists told me that he had kept his bees 186 days in the cellar one winter and that they came out in good shape in the spring. He stated that the temperature of his cellar kept regularly at 49 degrees, but when I visited it, the thermometer registered only 45 degrees which is a satisfactory degree for the wintering of bees. They pile the hives in the cellar four or five tiers high, much as we do. Some had their bees already in the cellar, but most of them were just preparing to take them in. They take them out at the blooming of the soft maple in spring.

In Western Quebec, they harvest large crops of honey. One record given at the meeting, from a man of St Hyacinthe, which was vouched for by several neighbors of his, also present, was 6221 pounds from 15 colonies, or about 415 pounds per colony of extracted honey. He had 13 frames Langstroth hives, with supers of the same dimension. In that locality, the bees get their first crop from white and sweet clover and their second crop from buckwheat. According to the reports in the hands of the secretary, Mr. Comire, the average of the crop for the entire Province was about 70 pounds per colony.

As I am a firmly convinced supporter of large hives, I was glad to see that, even in that country with short summers, the best crops were harvested from the large hives.

The beekeepers of the western part of Quebec are practically a unit in praising the Italian bees. The beekeepers are encouraged to buy Italian queens, for the Province has appropriated the sum of $500 to pay half of the cost for the apiarists who wish to try them. The only difficulty is that this amount is insufficient to supply as many queens as have been desired. The Province has already passed a law forbidding the use of poisonous sprays on fruit bloom. They have also passed a law compelling the beekeeper who keeps his apiary within 50 feet of neighbors' homes to build an eight foot tight board fence between the hives and the neighbor's yard. They say that this is an advantage because when they have complied with the law, if anything happens, they cannot be held responsible.

The homes are usually very close together and the villages are strung along a roadside. The lands were granted in long narrow strips, only 180 feet wide, which extend back several miles. This was for the better protection, in the old days, against the Indians, who were not destroyed as in Anglo-Saxon countries, but were slowly civilized. There are still Indian villages in close proximity, and I was shown a settlement of Abenakis who have become so mixed with the whites as to be almost indistinguishable.

The French Canadians of Quebec have retained their identity, their language and their religion, in spite of the efforts to assimilate them with the more numerous Anglo-Saxons. They have fine, neat homes, they are thrifty and prolific. It is said that the French population of Quebec doubles every 20 years and the Province would soon be overstocked if their young people did not emigrate towards the Great West.

HONEY PLANTS OF IOWA.

BY L. H. PAMMEL, AMES.

Through the kindness of your secretary, Mr. S. W. Snyder, I have been invited to prepare a paper on the honey plants of Iowa. I am glad to appear before you, because the Iowa State College wants your co-operation in the study of the honey plants of Iowa. In a little leaflet issued this summer by the Botanical Section, "Information Regarding the Honey Plants of Iowa," the following statement was made:

"Mr. Frank C. Pellett, the State Inspector of Apiaries, estimates the honey production in Iowa at ten to twelve million pounds annually. He estimates, moreover, that the bees could gather $5,000,000 worth more of honey that now goes to waste.

Aside from honey production, bees and other insects are of great importance in the pollination of flowers. Without these insects, in many cases, seed and fruit will not form. They are, therefore, of inestimable value to the fruit and agricultural interests of the state. It has seemed wise to undertake an exhaustive study of the problem from many different angles. Professor C. F. Curtiss, Director of the Iowa Agricultural Experiment Station, has authorized the undertaking of a study of this problem. It will take time to do this work properly, since a great many questions are involved. In this work the Botanical Section will have cooperation on fruit blossoms and leguminous forage plants (alfalfa, etc.,) by Dr. J. N. Martin. Prof. L. A. Kenoyer and a number of assisants will, during this and succeeding seasons, work on the problems of honey plants, insects, nectar secretion, etc., and the beekeepers are invited to co-operate with us by filling out the blanks on this sheet and indicating as fully as possible their experience with honey plants.

It is especially desirable to obtain specimens of honey plants. We would appreciate your sending these specimens to us with notes on their abundance and their value for honey purposes.

Yours truly,
(Signed) L. H. PAMMEL,
Botanist, Iowa Experiment Station.

May I invite your attention to this leaflet and ask each of you to take this home and look over the questions, answer them and return to me. It will enable us to carry on the investigation more intelligently.

The list of plants enumerated in this pamphlet gives the more important honey plants. It is not, however, complete. Some of the plants mentioned in this list are not generally distributed in the state. One plant may be a good honey plant in one part of the state and not in another. A plant may yield an abundance of nectar at one time and not at all at other times. During a visit in southeastern Iowa the past summer, I found bees abundant on the yellow, or golden Spanish needle (Bidens aurea) in the vicinity of Centerville. This was after a rain. A day later, the same plant was found in abundance near Keosauqua, the

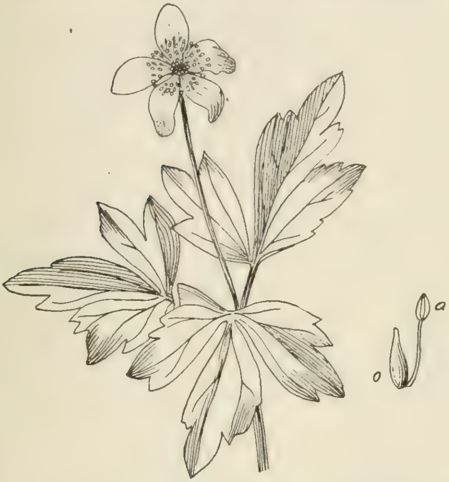


Fig. 1.

Common Wind Flower (*Anemone nemorosa*). One of the early spring blooming plants visited by bees. (Charlotte M. King.)

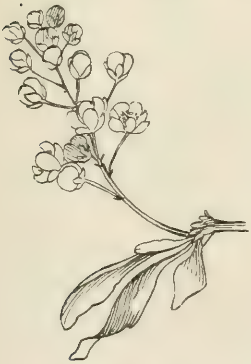


Fig. 2.

Common Barberry (*Berberis vulgari*). An excellent honey plant. (Charlotte M. King.)

rains here had occurred in abundance a few days previous. The day was bright and clear and in spite of the fact that an abundance of the plant occurred in the vicinity of an apiary, no bees, or very few, were found on this species. Every beekeeper has made similar observations. Prof. Kenoyer tells me that although buckwheat was in blossom abundantly in southeastern Kansas until frost, very few honey bees were working on this plant. Some plants have their maximum secretion for honey in the morning. Mr. Munger and Prof. Kenoyer found honey bees working on buckwheat only in the morning until 10:00 a. m. During the latter part of September, I found that the same was still true. Bees were abundant up to 10:00 a. m. or a little later. None were observed at 11:00 a. m. or 12:00 m., or in the afternoon.

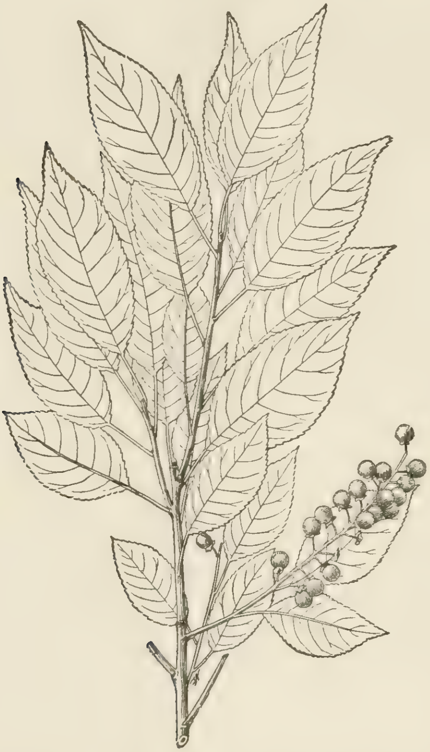


Fig. 3.

Black cherry (*Prunus serotiria*). Visited by bees. Gather some honey from the flowers. (U. S. Dept. Agrl.)

The amount of nectar secreted varies in the different plants.* Thus Mr. Dadant mentions the copius secretion of nectar in the South African *Protea mellifera*.† It is said to be so abundant that the natives gather the nectar by dipping it from the flowers with spoons. The writer and

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*Langstroth on The Hive and Honey Bee, revised by Dadant, 397.

†Proc. Ia. Acad. Sci. 2:148.

Miss Beech, in a paper on the pollination of cucurbits, made this statement with reference to the nectar in the flower of the common squash (*Cucurbita maxima*): "In some pistillate flowers covered with bags, it (nectar) was found outside the nectary. In one or two cases a half teaspoonful of sweet nectar might easily have been obtained."

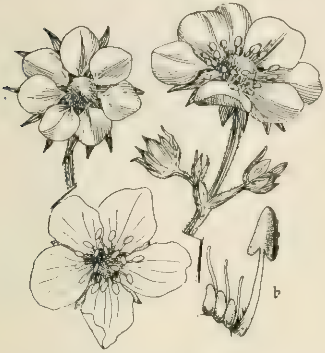

Fig. 4.

Cultivated Strawberry. Visited by bees and pollinated by them. (Charlotte M. King.)

The amount of moisture in the soil, and the humidity of the atmosphere gives us in a measure the amount of nectar secreted by the plant. We hope to determine some of these points in our investigation. Prof. L. A. Kenoyer during the past summer has been investigating this problem, and we hope to get at some of the interesting facts before another season is over. In this connection my attention has been called by Mr.

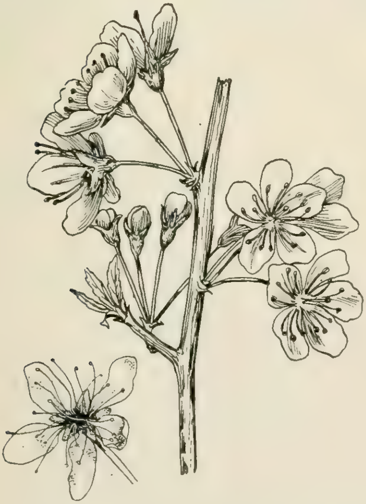

Fig. 5.

Wild Plum (*Prunus americana*). Chiefly pollinated by honey bees. Bees gather much honey from these flowers. (Charlotte King.)

Pellett to an interesting article on the secretion of nectar in flowers by F. W. Sladen.‡ For instance, he calls attention to an interesting feature in nectar secretion by *Arabis alpina* which blooms in England in April and May. During the first half of its flowering period it is visited abundantly by honey bees but not later. In the case of goldenrods at Ottawa, he found during the first two weeks of flowering, hardly a bee was seen on them, it was dry, but during the third week of blooming there had been no change in the weather, that is there had been no rain, the goldenrod was in full bloom and the earliest flowers had withered, bees were working abundantly. It seems to me that there is here an interesting problem for us to work out.

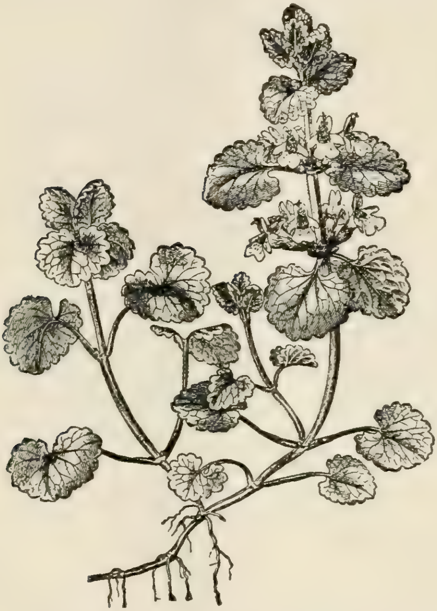

Fig. 6.

Creeping Charlie (*Nepeta hederacea*). Related to catnip. Catnip is a most excellent honey plant. Creeping Charlie is not visited as frequently. (Johns Medical Botany of North America.)

I may here allude to another interesting matter concerning the gathering of honey by bees and the visits of honey bees to different flowers. First, there is the matter of promiscious visiting of different species of plants. Some years ago, while I was studying the pollination of clover, I found growing together in one small area, the common red clover, white clover, Partridge pea, Horsemint. I carefully observed bumble bees and honey bees. I found that a bee would visit only a single species of plant, the honey bee did not as a rule go from the white clover to the Partridge pea. The bumblebee did not go from the red clover to the Horsemint. This confirms the results that have usually been published on this point. A second point I wish to refer to is this. When there is a scarcity of honey, bees visit flowers that ordinarily are not visited by them. When the flow of nectar in the white clover is abundant, bees will not go to red clover, but when nectar and pollen are scarce, honey bees are frequently found on red clover. Do honey bees get nectar from the red clover? I notice the statement made in Langstroth's Hive and

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‡Beekeepers Review 27: 419, Nov., 1914.

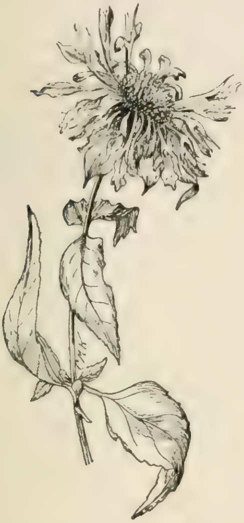

Fig. 7.

Horse Mint (*Monarda fistulosa*). Pollinated by bumble bees. The coralla tubes too large for honey bees to get nectar. Mr. Brown at the Bee Keepers' convention at Ames, stated bees gather honey from this plant.

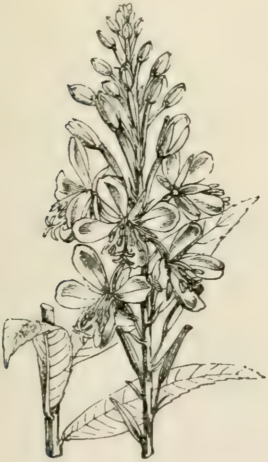

Fig. 8.

Willow Herb or Fireweed (*Epilobium augustifolium*). A splendid honey plant. Common northward in the Rocky Mountains and on the Pacific coast.

Honey Bee, that "unfortunately its corollas are usually too deep for the tongue of our bees. Yet sometimes in summer, they can reach the nectar, either because its corollas are shortened on account of dryness or because they are more copiously filled." Some years ago, I made this statement in my Ecology, that honey bees frequently pollinated red clover because they frequently collect pollen. The tongue is not long enough to reach the nectar. In some cases the nectar is taken through perforations.

A few years ago I had a large number of measurements made of the length of the staminal tube. Miss Mildred Walls found by measurement, that out of 493 flowers, the mean length was .3513 in. and that the length of the tube varied between .3082 in. to .4018 in. The flower because of the pleasant odor and large amount of nectar are attractive to insects. The nectar is concealed in the base of the staminal tube, which is formed by the fusion of the nine lower filaments and attached to the claws of the petals. The upper free stamen lies on one side so that the opening of the staminal tube permits the insect to get the nectar. In order to reach the nectar, the honey bee must have a tongue from .3543 to .3937 inches in length to get the nectar.

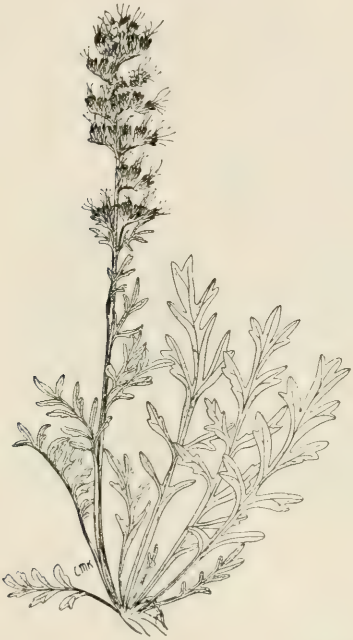

Fig. 9.

Phacelia (*Phacelia serica*). This plant is visited by bees. In the Rocky Mountains.

I have for several years closely observed honey bees and red clover, and from these observations I am still inclined to the opinion, earlier expressed, that honey bees do not get nectar from the flowers of the red clover, notwithstanding the statements made by several correspondents in recent numbers of the American Bee Journal, and the opinion of many beekeepers in Iowa. Third, I want to especially exonerate the honey bee from the perforation of flowers and the injury of fruits. Some years ago I published a monograph on the Pollination of Phlomis tuberosa and the Perforation of Flowers. The conclusion reached was that our flowers are not perforated by honey bees.§ This is slightly at variance with a few recorded observations by Hermann Mueller, who found that the honey bee perforated the flowers of *Erica Tetralix* and *Nepeta hederacea.*

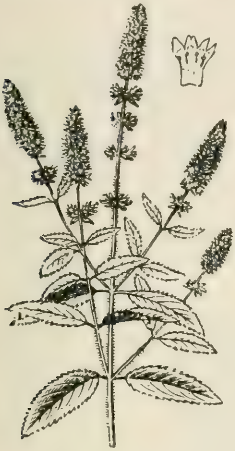

Fig. 10.

Mint (*Mentha piperita*). Bees frequently visit this mint.

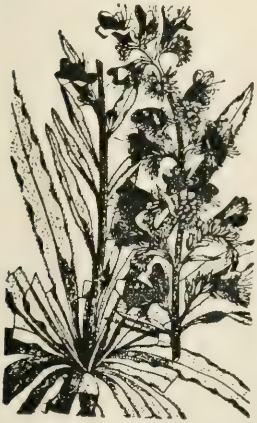

Fig. 11.

Blue Weed (*Echium vulgare*). Many of the borages are good honey plants. (Selby Ohio Agrl. Exp. Sta.)

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§Trans. St. Louis Acad. Sci. 5:241.

The fourth point I desire to make is this. Let us plant more honey plants. A few friends of mine have lately been discussing the desirability of reducing the width of the Iowa roads. Another friend, Senator Larrabee, has been advocating the planting of the highways with useful forage plants to make the highways useful. I believe this is a very sensible proposition. It would bring in several million dollars annually to the farmers of Iowa. The beekeepers of Iowa should encourage Senator Larrabee and advocate the sowing of such plants as the alsike clover, which is a most excellent honey plant and a most useful forage plant. There are many places on our highways that cannot be reclaimed for meadow purposes. I refer to the slopes of hills and banks. These should not be left bare, but can be planted with trees and shrubs useful for the beekeepers and at the same time furnish an excellent honey crop. In many places in Iowa, such places can be planted with the wild crab, a splendid honey plant. The Russian Oleaster, which blooms later than the wild crab, and in many places the basswood would be a most suit-

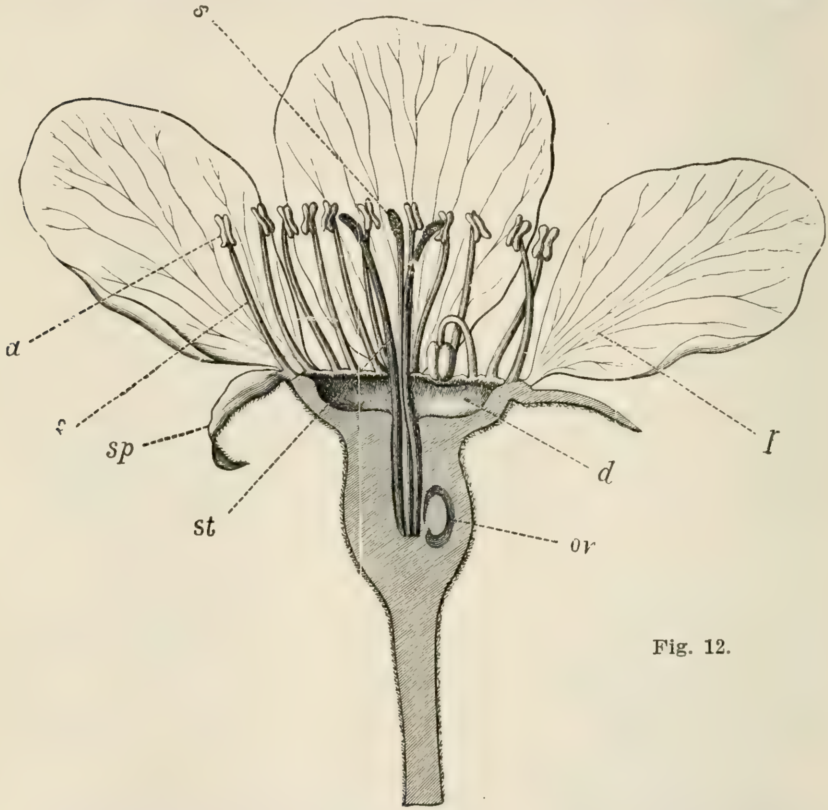


Fig. 12.

Bartlett Pear, an enlarged flower. *Sp*, sepals; *p*, petals; *a*, anther of stamens; *f*, filament; *s*, stigma; *d*, disk where nectar is secreted; *ov*, ovary. (Waite, U. S. Dept. of Agrl.)

able plant. Then there is the Vitex. A host of other ornamental honey shrubs and small trees should be planted with reference to their blooming season, so as to give continuous bee forage. Such planting would be a delight to those who use our highways, besides furnishing a large amount of honey.

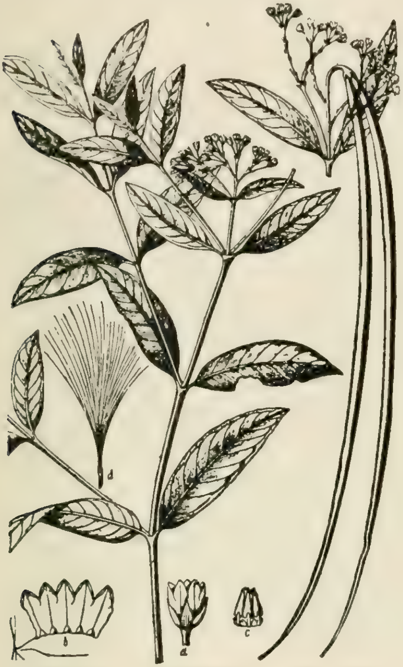


Fig. 13.

Dogbane (*Apocynum*). Bees were abundant on the dogbane the past summer. (U. S. Dept. Agrl.)

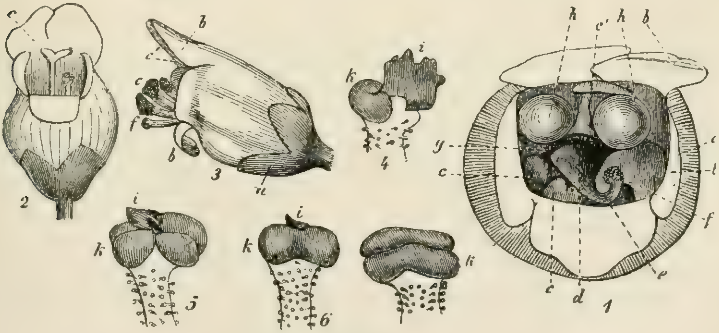


Fig. 14.

Simpson Honey Plant (*Scrophularia nodosia*). Flowers in different stages, 2, the female stage; 3, male stage; *n*, calyx; *b*, corolla; *c*, stamens; *f*, stigma. (After Mueller.)

HONEY PLANTS.

Should I give you a list of all the honey plants in Iowa, I would go beyond the limits of a paper desirable at a meeting of this kind.

I want to call your attention to a few of our most important plants. Of the early blooming plants, the willows are the most important. There are several species widely distributed in the state. The almond leaved willow, (*Salix amygdaloides*), the Black willow (*alix nigra*), the pussy willow(*Salix cordata*). These species furnish an abundance of nectar and pollen. The pussy willow is the earlier of the blooming willows. The soft maple (*Acer saccharinum*), now cultivated everywhere in the state, is one of the best of the early blooming plants for nectar. The hard maple (*Acer nigrum*) also furnishes an abundance of nectar, but it blooms much later. The dandelion (*Taraxacum officinale*) is one of the early and late nectar producing plants. I saw honey bees visiting it on the 30th of October 1914. In May, or the latter part of April, the apple, plum, and cherry furnish an abundance of honey. Then come the raspberry and blackberry and with them the white clover followed by the alsike clover, and soon the white sweet clover, which in Iowa is

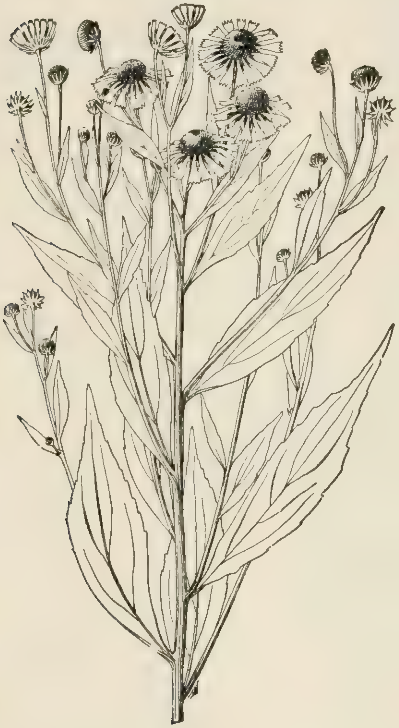


Fig. 15.

Sneezeweed (*Helenium autumnale*). Bees gather honey from this plant. It is however bitter. (U. S. Dept. of Agriculture.)

the best of all the honey plants. Though it be ever so dry it furnishes a good supply of honey during the entire blooming season, till nipped by the frost. The yellow sweet clover is also a good honey plant, though not as good as the white flowered species. The basswood is one of the best of our honey plants, though its season is short. The tree might very profitably be planted as a shade tree more than it is. There is no better shade tree. Simpson honey plant, though a homely weed is an excellent honey plant. The Motherwort (*Leonurus Cardiaca*) and catnip are most excellent honey plants, though both are rather troublesome weeds. The Persicoaria, Pennsylvania smartweed or Heartsease, is a most excellent honey plant. Buckwheat in its season is a splendid honey plant, although the honey is dark in color. One of our very common pasture weeds the Vervain (*Verbena stricta*) is one of the best of the dry season honey plants. The honey is of good quality. Of the composites, I have mentioned the dandelion. We should also mention common Boneset (*Eupatorium ageratoides*), Spanish Needle (*Bidens aurea*), perhaps the best of all of our composites is common in Southern Iowa. Those of northern Iowa (*B. cernuua*) in sloughs, and the purple boneset of similar places are excellent. I do not think that our goldenrod and asters furnish as much honey as some people believe but this year in places they furnished some. Snowberry (*Symphoricarpos occidentalis*) and Buckbrush (*Symphoricarpos orbiculatus*) furnish much honey of

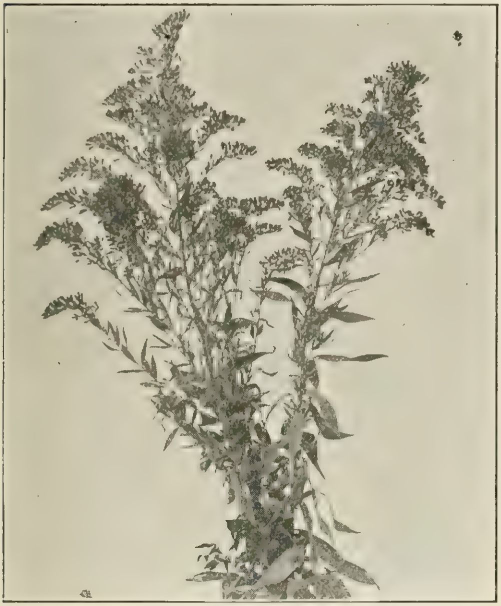


Fig. 16.

Canadian Goldenrod (*Solidago canadensis*). Pollinated by bees and in some places furnishes honey. (Iowa Agrl. Exp. Station.)

good quality. The former is common in western Iowa and the latter in western and southern Iowa. Bitter honey is obtained from the sneezeweed (*Helenium autumnale*). The Snow on the mountain furnishes an acrid, poisonous honey.

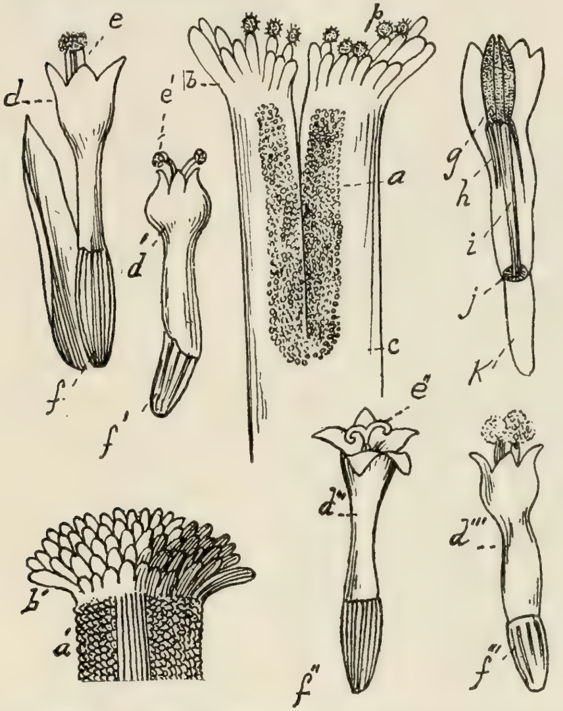


Fig. 17.

Yarrow (*Achillea millefolium*). Flower and its structure, f, f^1, f^2, and f^3, different stages and views of the flower; *e*, in *f* style pushing the pollen out; *g*, the five anthers surrounding the style; *h*, filament of the stamens; *d*, coralla; *p*, pollen on brush hairs papillae; *j*, nectary; *k*, ovary, this becomes the seed; *a*, stigmatic papillae, the pollen grains germinate here. (After Mueller.)

DISCUSSION AFTER DR. PAMMEL'S PAPER.

Mrs. Miller: Is the Black-Eyed Susan a good honey plant?

Dr. Pammel: It is not so good as the Crownbeard or Golden Glow.

Mr. Beckhart: How is the Rattle Weed—sensitive plant—Partridge Pea.

Dr. Pammel: It is a good honey plant.

Mr. Brown: Is Motherwort a good plant?

Dr. Pammel: It secretes plenty of nectar but not of good quality.

Mr. Snyder: How about the Russian Olive?

Dr. Pammel: The Russian Olive is very good, and its extremely rapid growth should recommend it to beekeepers.

Mr. Pellett: Buckwheat is overestimated as a honey plant, under Iowa conditions.

Mr. Brown: In my district I have observed that the honey produced from buckwheat is much the same as that produced from Heartsease.

THE VALUE OF BEES IN HORTICULTURE.

BY DR. BURTON N. GATES.

Associate Professor of Beekeeping, Massachusetts Agricultural College, Amherst.

THE BEE'S SERVICE IN GARDEN AND ORCHARD.

This field of the biology of bees and plants or the relations of honey bees to horticulture is a vast one, somewhat treacherous and intricate. While it has been worked for years and while there is a vast accumulation of information concerning the method by which the various plants are pollinated, yet today there is considerable dispute as to the actual need of honey bees or even other insects in setting some of our more important fruits and vegetables. As Dr. Pammel said in his lecture last evening, there is a recent attempt today to remove the poetry from our belief in cross-pollination, to show that apples for instance, are capable of self-pollination, thereby dispensing with the need of bee service. With a full realization of this uncertainty concerning our present knowledge of the value and need of bees, in every horticultural pursuit, I am inclined to believe that for years to come the old assumption that bees, to a greater or less extent, are of service in procuring our crops of fruits and vegetables, will be retained. From this standpoint, therefore, and with it fully in mind that every future discovery may contradict our present ideas, I take up my subject.

It is generally believed that bees pollinate the greatest number of flowers of any insect. Generally speaking, too, every horticulturist is indebted to their inestimable service and while this has been but partially realized for years and decades, it is relatively recent that the horticulturist has made any active effort to retain bee service, thereby insuring a crop. Today he is more awake to the situation and ready to realize that the honey bee is an agent of service which will better enable him to meet that important, keen competition.

The bee's service to the horticulturist may be briefly stated as the result of her effort to secure either nectar or pollen (which is the male element of the flower). In her search for nectar or pollen, this is transplanted from the anther to the stigma (which is female), effecting pollination, resulting, if the elements are correct in fertilization. Many flowers, it has been shown, repeatedly require for satisfactory fertilization, cross-pollination, producing a better, larger, more fully developed and rounded, oftentimes more highly colored fragrant, luscious fruit. Dr. Pammel well explained, last evening, some of the many intricate mechanisms by which pollination is accomplished and which have been described by many botanists, among whom are Darwin and Müller.

THE CLASSES OF BEES WHICH SERVE IN THE ORCHARD AND GARDEN.

In considering the relationship of bees to horticulture it should be remembered that there are two general classes of bees, roughly grouped as the solitary and the colonial, or social bees. The solitary bees live isolated and singly and are not always numerous. The other group, the social bees, comprise a number of genera or species and may be roughly exemplified by the common bumble bee and our honey bee. Any and all of these bees, including the honey bee, may be wild. In its larger sense, wild bees should include all the various kinds, both social and solitary. They may often be observed on the blossoms of pear, apple and the flowers of many other fruits. Considering the vast number of these wild insects it so happens in well cultivated localities, that the honey bee outnumbers the other wild forms. These honey bees may, as just intimated, not come from apiaries under the control of some beekeeper but may come from the woods. If it were possible to calculate the value derived from the pollination by honey bees alone, these returns would without doubt, far exceed the total income to be derived through the produce of honey, bees and wax. Thus, as has already been said, the honey bee is of inestimable value to the orchardist or horticulturist, besides being a source of revenue to the beekeeper. Thus the honey bee serves in a double capacity; she is a source of double income.

It may be well to mention at this time some of the more common fruits and vegetables which are essentially in need of the activities of the honey bee. The list might be made much longer than that which I will give, yet it is generally estimated that honey bees are important in the setting of the apple, pear, plum, quince, peach, raspberry, blackberry, strawberry (to some extent and according to locality), the mulberry, pea, bean, currant, grape, squash, melon, cucumber and the cranberry. The tomato apparently is not dependent upon the service of bees, yet in greenhouses for tomato culture, bees have been seen to work the flowers, apparently for pollen. It should also be borne in mind that season, locality and climatic conditions are tremendous factors in the activities of bees on these and other plants. For illustration, the strawberry may be cited. The writer has seen in some localities, large areas of strawberries devoid of bees, while elsewhere the honey bee was active. This is repeatedly observed with other plants and in different localities and seasons.

IN CRANBERRY CULTURE.

The value of the honey bee in cranberry cultivation has but recently been recognized. The cranberry industry of Massachusetts for instance, is worth between one million and a million and a half dollars annually. It has been observed that in certain years, certain parts of cranberry bogs fail. Dr. Franklin, at the experimental bog in Massachusetts, has carried out experiments, the details of which show that bees are of service and explain that the failure of bogs or parts of bogs may be attributed to the inability or lack of bees to work the blossoms while the vines are in bloom. It has been shown, too, that the inability of bees to visit these bogs was due to climatic conditions, the prevalence of winds or coldness in that part of the bog. With the large number of blossoms which are produced on cranberry vines, it was also established that bees maintained purposely for their service in pollination were an insurance to cranberry growers who are now maintaining apiaries in proportion to the size of their bogs. It cannot definitely be stated how many colonies are necessary to a certain area; this will depend upon conditions. It may be suggested, however, that one colony to the acre of bog is none too many bees.

IN CUCUMBER GROWING.

The cucumber has been mentioned. In Massachusetts in recent years, cucumber growing under glass has developed. Originally the growers "fertilized the plants" by hand, a most laborious process. Bees were later introduced and found to be indispensable, especially in the larger commercial houses. One grower, for instance, has forty acres under glass. Taking the industry in Massachusetts as a whole, it requires between two and three thousand colonies of bees annually to serve in the cucumber greenhouses. These colonies are largely reduced by the extremely unfavorable conditions of greenhouse life, so that cucumber-growing-under-glass demands that the beekeepers raise bees purposely for greenhouses. The larger commercial cucumber growers, too, have united in certain localities and maintain a circuit beekeeper whose duty it is to care for the bees of the greenhouses.

IN VARIOUS FRUIT ORCHARDS.

It might be well to take up some of the other special horticultural pursuits and show how bees are utilized in these, yet a general statement may serve. Fruit orchards, that is, the orchards of larger fruits, are much the same the country over. Within recent years, incorporated or large fruit growing companies have sprung up. With these has come more keen competition. As a natural consequence in order to avoid the failure or partial failure of a crop apiaries have have been maintained for the orchards and within the last two or three years apple growers, particularly in the West, have definitely decided to maintain bees, disregarding the honey production factor. In connection with the apple industry of the West I shall show you in the slides an almond orchard in California where bees are maintained purposely to set the almonds; so with the pears and lesser fruits. Peaches, however, are apparently not fully dependent upon bee service.

With this general survey of the situation I wish now to turn to a more particular examination of the requirement of bees for horticultural service.

FAILURE VS. SUCCESS.

In nature, especially wild nature, it is well known that the prevalence of life, either of plant or animal, is subject to fluctuation due to favorable or unfavorable environmental conditions. For instance, in a locality this year there may be a pest of mosquitoes or house flies; next year in the same locality the flies may be scarce and the mosquito more abundant or *vice versa*. So it is with the game birds, the fish, weeds and whatnot. They are plentiful or scarce from time to time and according to season or environmental conditions. It may be, therefore, expressed as a fundamental biological law, that the prevalence of all life, including bees, is subject to fluctuation. Bees have their periods of UPS AND DOWNS, numerousness and scarity. When conditions are favorable they rise to the crest of prosperity and prevalence; when unfavorable conditions set in, as for instance a disease appears in the locality, they become greatly reduced and scarcer. Hard winters may depreciate bees, so that within the short space of a year their prevalence may have fluctuated from the crest of prevalency to a depressed frequency; thus when most needed by the horticulturist as pollen bearers they may be at a low ebb and scarce. This biological law may be illustrated by a graphic or hypothetical curve of fluctuation or frequency. I have repeatedly given this at conventions and show it to you at this time.

The question naturally arises, how is this fluctuation to be overcome? How is the grower to protect himself against a possible lack or security of pollen bearers? There seems to me but one answer: KEEP BEES. By this means alone it would seem possible to control or provide for ample pollination. Growers commonly plow, cultivate, fertilize, they plant their trees, disbud, scrape, spray, according to the most approved practices of our best agricultural and horticultural experts; but, in many instances, these are of little or no avail if bees are absent. By maintaining colonies in proportion to the size of the orchard or farm, dependency upon wild bees or bees from a neighboring apiary is largely or wholly eliminated. I have often said IT IS FAR SAFER TO FLOOD AN APPLE ORCHARD FOR INSTANCE, WITH BEES DURING THE BLOOMING PERIOD THAN TO CHANCE THEIR SCARCITY. Furthermore, the cost of maintaining an apiary is infinitesimal and negligible as compared to the vast benefits or returns. Moreover, it should not be forgotten that weather conditions during fruit bloom often prohibit the free flight of bees a mile or two across country. Numberless observations are on record of orchards having been successfully fertilized where bees had less than a mile to fly, while more distant orchards, the same year, bore smaller or no crops. Thus, to put it mildly, an apiary in or adjacent to an orchard will save great failure.

A $3,800.00 CROP DUE TO BEES.

I have in mind a specific instance reported by one of our agricultural experiment stations. In one of the western states there are two comparable apple orchards of about equal acreage, of similar location and age, each in a "pocket" in the foothills of an admirable fruit land, both well drained and protected from frost. One orchard bore heavily for successive years; in the other there was no crop, although the trees blossomed heavily each spring. In despair of financial ruin, the owner called the assistance of a State Experiment Station. A pomologist and entomologist was sent, who examined critically all the conditions in each of the orchards. He was about to return without solving the problem of failure, when the question arose, were there ever bees maintained to set this orchard which has fruited? It was asserted, however, that neither orchard had ever had bees. However, the problem was not given up and the ground was again gone over. As the experiment station man was about to leave without finding any apparent reason for failure, he chanced to see a stream of bees coming in one of the orchards from underneath a pile of swale. Further investigation revealed a fallen log, sunken in the damp land, sheltering a large colony of bees. It is needless to say in which orchard the log was. Immediately bees were secured for the failing orchard; the owner then netted $3,800 on his crop.

It has not been my purpose to give you many details. To do this I might have to write a book and by the time it was written, I might doubtless find that new investigations had revealed new results. This is a period of discovery and change, but I hope my attempted biological fundamentals will hold. For example, first, cross-pollination would seem to be the usual policy in nature, resulting as I have said, among other things, in greater strength, vigor and beauty. Second, that all life is subject to a frequency of fluctuation. Therefore, it is not desirable in fruit or vegetable growing, to depend upon the services of bees over which you have no control, but rather to maintain controlled apiaries especially for either horticultural or market gardening, pollinating services. Third, these two biological principles are further substantiated and applied by the practical grower, who is more and more dependent upon bees in his field to meet important competition. There is, therefore, a good reason for keeping more bees if you wish more fruit.

With these general remarks, it is my purpose to turn to the lantern slides and show you some of the results of the utilization of bees in this horticultural work. Therewith, I would show you other slides, of the apicultural work in Massachusetts, something of the natural history of the honey bee and as a general interest feature, a few of the prominent apiaries of the country.

BEES AS A NUISANCE.

J. D. Gustin, Kansas City, Mo.

Increasing population, greater dissemination of knowledge, and the development and specialization of industries, pursuits, and occupations combine to add constantly to the complexity of the relations of individuals, and to call, from time to time, for the readjustment of the affairs of men to meet changed and changing conditions. In no other branch of the law is the ingenuity of the courts more heavily taxed in this manner than in the subject of nuisances, where, from the very nature of the subject, first principles, rather than specific legislative enactment, must always exert a controlling influence. The lawmaking power may, as occasion seems to require, declare that particular objects, actions, omissions, etc., shall be nuisances, either with or without regard to attending conditions or circumstances, but the application of such statutes is necessarily so limited that the general law of the subject is not affected.

It therefore follows that courts still deal with nuisances largely from the principles of the common law and it is a matter of serious doubt whether, in any instance, specific legislative action can be proven to have any substantial value as an addition to the law of the subject. A nuisance at common law is that class of wrongs that arise from unreasonable, unwarrantable, or unlawful use by a person of his own property, real or personal, or from his own improper, indecent or unlawful personal conduct working an obstruction of or injury to a right of another, or of the public, and producing such material annoyance, inconvenience, discomfort, or hurt that the law will presume a consequent damage.

Text writers and legislative enactments state many variations of the foregoing comprehensive definition from Mr. Wood's treatise on nuisances, but there is no substantial disagreement as to what constitutes a nuisance. Another definition, stated broadly as a general proposition, is that every enjoyment by one of his own property which violates in an essential degree the rights of another is a nuisance; and this substantial violation of a right is the true test of a nuisance, for it is not every use of his property by one which works injury to the property of another that constitutes a nuisance. Injury and damage are essential elements of a nuisance, but they may both exist as a result of an act or thing which is not a nuisance, because no right is violated. On the other hand, the pecuniary injury may be insignificent and the act or thing causing them be such an invasion of the rights of another, or of the public, as to constitute a nuisance for which an action for damages or for abatement will lie.

Nuisances are classified by the law as public and private, and there is no authority for a third class called "mixed" nuisances. A nuisance is public where it affects the rights of individuals as a part of the public, or the common rights of all the community alike; a private nuisance is one affecting a single individual, or individuals of a particular class, group, or locality in a private right; the third class, referred to as mixed nuisances, are public in their nature, but at the same time specially injurious or detrimental to one or more individuals in particular, who suffer a different or greater hurt than the community in general.

Nuisances are further divided into nuisances *per se*, or such as are declared so by the common law or by some statute, without regard to locality, surroundings, or circumstances, and nuisances *per accidens*, or those owing their hurtful consequences to some particular attendant circumstances, surrounding, location, or condition, without which they would not be unlawful. There are other less important and rather technical distinctions not necessary to be noticed here. The foregoing preliminary and very elementary observations of the general law of nuisances are necessary to a consideration of any subject with reference to its existence as a nuisance or otherwise.

It is also a frequent statement of the law, and may be accepted as authoritative, that no lawful occupation or business is a nuisance *per se*, except it be declared so by some special enactment prohibiting certain things as objectionable to particular localities. So also the reasonableness of the use of one's property may depend upon its situation, for what might be lawful in one locality would prove intolerable in another. The use of a building in the midst of a city densely populated for a storage house for hardware would not be objectionable in the slightest degree, while the use of the same building for the storage of gunpowder or other high explosives could not be permitted.

The common law, proceeding from fixed principles of universal application, and developing from the growth of civilization, has, in each succeeding period, found ready adjustment to new subjects resulting from the widening dominion of mankind over the creatures and forces of nature, furnishing a ready remedy for every wrongful encroachment of one upon the rights of another. In the times of the early law writers bees were most generally known as they existed in their original state. Hence they were called—*ferae naturae*—and classed as wild animals. A property right, or at least a qualified property right, in them could be acquired by capture which, in accord with the general rule concerning wild animals, existed so long as the captor could hold them in possession. A distinction seems always to have been made between the possession of animals ferocious and those of gentler dispositions, and it was an indictable as a nuisance to permit an animal of known mischievous disposition to go at large. Bees, however, seem never to have been regarded as ferocious or as likely to do injury to persons or property, and in the far greater number of instances in which they have been the subject of judicial consideration the questions at issue have concerned the property interests in them. It is doubtful now, however, if any court would denominate them as wild animals, in view of the present general state of development of the industry of honey production and the numerous instances of State legislation designed to promote and protect the breeding and rearing of bees for that purpose. In the one or two cases decided in American jurisdictions in which the question has been presented, it has been determined, in accordance with the rule above referred to, that the keeping of bees, even in large numbers and in towns and villages, is not a nuisance *per se*.

But greater interest, perhaps, centers in the question of whether or not bees may be so kept as to constitute a private nuisance, and also whether municipal corporations, as cities and towns, may restrain or prohibit their presence within the corporate limits. In answering the first proposition, it must be borne in mind that persons who dwell in urban communities must of necessity submit to such restrictions upon their absolute liberties that the dwelling of other persons therein shall be tolerable. As it is the unreasonable or unwarrantable use of one's premises or property, otherwise lawful, that contributes an essential element of a nuisance, a first inquiry in any case would be directed to this point of reasonableness of the use or occupation, and in determining this all of the surrounding facts and circumstances would enter into the consideration. The presence of one colony at a given point might be perfectly consistent with the due observance of the rights of the owner of the next lot, while a colony stationed at another point within the same distance would be obnoxious to the law. Again, one colony at a given place might pass unnoticed, while a number of colonies at the same place would be a nuisance. The habits of the bees, the line of flight, their temper and disposition of the colonies, either separately or when collected together in numbers, might all furnish matter of more or less weight in reaching a conclusion. So also the character of the annoyance or injury done to the complainant must be a substantial element. In the only reported case involving this question it was charged, and the court found there was proof, "that during the spring and summer months the bees so kept"—140 colonies on an adjoining city lot and within 100 feet of plaintiff's dwelling—"by defendants greatly interfered with the quiet and proper enjoyment and possession of plaintiff's premises, driving him, his servants and guests from his garden and grounds, and stinging them, interfered with the enjoyment of his home, and with his family while engaged in the performance of their domestic duties, soiling articles of clothing when exposed on his premises, and made his dwelling and premises unfit for habitation." These facts were held to constitute a nuisance, against which the plaintiff was entitled to injunction and nominal damages. These facts just recited, however, probably present an extreme case, the immediate proximity of so many colonies being, no doubt, persuasive evidence that the annoyance suffered by the plaintiff was due to the defendant's use of his premises. Greater difficulty would be experienced in reaching such a conclusion if there were no colonies stationed in the immediate vicinity, a thing entirely possible under the common belief that the insects go considerable distances for their stores.

So it may be said of bees, as of other property, that no hard and fast rule can be laid down by which to determine in advance whether the presence of bees in any given numbers or at any given point will amount to a nuisance. But, not being a nuisance of themselves, as a matter of law, and absent also any general State enactment declaring them to be such, bees will not, under any circumstances be presumed to be a nuisance, but the matter will rest in the proof adduced, with the burden upon the party alleging the affirmative. But they may, upon proof of particular facts showing all the elements necessary to the existence of a nuisance, he condemned as such, either of a private or public character, as the nature of the injury might decide.

Predicated upon the theory advanced in the beginning that courts would now, if the matter were called in question, decide that bees are domestic animals, and it having already become a matter of legislative recognition that they are subject to communicable diseases, a question arises as to the liability of the keeper of diseased bees. At common law it was an indictable offense, which has been reenacted by statute in most of the states, to take a domestic animal sufferings from a communicable disease into a public place or to turn it into the highway so that the disease might be communicated to the animals of other persons. It could hardly be said to be less culpable to knowingly keep diseased bees, which, by their nature may not be restrained or confined, to spread disease to the apiaries of other owners. If to turn a horse with glanders or a sheep with footrot into the highway is a public nusiance, on the same reasoning to turn bees at large to carry communicable diseases peculiar to them to other bees ought to be an offense of the same grade.

The power of a municipal corporation, as a town or village, to restrain or prohibit within its limits the keeping of bees, or to denounce them as a nuisance, is commonly reported as a fruitful source of vexation to keepers of bees, but one case only is reported as involving a judicial determination of that particular point And here, too, a few preliminary observations will be necessary to proper understanding of this phase of the nuisance laws. Cities, towns, and villages, as municipal corporations or public bodies, receive their powers by express grant from the legislative authority of the State, and with the exception of some unenumerated powers without which the corporate body could not exercise its essential functions as such, their powers are limited to those expressly named in the grant. This grant of power is usually contained in the general laws of the State governing cities, towns, and villages, and is called the charter power, the law or statute itself being usually known as the charter. Keeping these facts in mind will aid the unprofessional man in understanding the terms to be encountered in an examination of local laws in regard to the power of a municipal corporation to legislate upon this subject.

Every state has its own peculiar policy toward these municipal corporations, and no two are exactly the same. They all, however, follow the same general plan, with variations influenced by local conditions. As the power of the state legislature is limited that its acts must be consistent with the constitution, so the power of a municipal corporation to make by-laws, as its ordinances or enactments are commonly known, must be in harmony with its charter, with this further distinction, that while the legislature of the state may exercise unlimited discretion in all matters not prohibited by the constitution, a municipal corporation is restricted in legislative action to those matters in which it is expressly authorized by its charter.

It is the general rule that cities, towns, and villages have conferred upon their common councils power to declare, abate, and remove nuisances. In the case of nuisances *per se*, whether at common law or by statute, or by ordinance in those cases in which the council may declare such nuisances, the power to abate by summary action is either expressly given or exists by necessary implication. Summary abatement means arbitrary removal or destruction without judicial process. Nearly, if not quite, all city charters contain grants of power to license, regulate, and restrict all businesses, pursuits, and avocations, and also a section known commonly as a "general welfare clause," by which the corporate body is empowered generally to enact such ordinances, rules, and regulations as may be necessary to preserve the peace, safety, and health of its inhabitants and promote their general welfare. To undertake to set out the specific provisions of the charter of the municipal corporations of the various states would extend this article far beyond its intended scope.

It is a cardinal rule of the courts that all ordinances must be reasonable, and that while a city may define, classify, and enact what things or classes of things shall be nuisances, and under what conditions and circumstances such things shall be deemed nuisances, this power is subject to the limitation that it is for the courts to determine whether, in a given case, the thing so defined and denounced is a nuisance in fact, and that if the court shall resolve this point in the negative the ordinance is invalid. Under this rule, in an Arkansas case, it was held that the municipal corporation could not prohibit the keeping and rearing of bees within its limits as a nuisance regardless of whether they were so in fact or not. And this case seems to have been received as announcing the correct rule in recent text works, though the point has not been raised elsewhere in controversy.

Under the rule just stated, the power of summary abatement would not exist, even thought the presence of bees in a particular part of the city should be declared objectionable, but the point would rest, as has been heretofore observed, in the proof adduced, the burden brings upon the party declaring the affirmative of the issue.

BASSWOOD PLANTING.

PROF. G. B. MACDONALD, AMES.

Beekeepers well know the value of basswood trees for the production of honey. It should be possible for farmers interested in bee culture to make the basswood trees serve a double purpose. Trees of this species might well be utilized for windbreak purposes as well as for the production of honey.

Under good conditions the basswood sometimes attain a height of 70 to 80 feet. The crown of the tree is quite compact and forms a very dense shade. It is a tree best suited to deep, rich, river-bottom soil and to cool situations. Very often the basswood will be found on the cooler slopes along with a variety of other trees. This species is quite hardy and although it will survive, in many instances, on up-land soil, yet as a general rule it is not advisable to plant this species in dry situations. The basswood can readily be reproduced by seed and by sprouts. The seeds ripen in September or early October. As soon as the seeds are collected they should be freed of the wings and planted at once. The freezing and thawing dring the winter aids in rotting and loosening the seed coat and, thereby, make possible an early germination. Although fall planting is generally recommended, it is possible to keep the seed over winter in a cool, dry place by storing in sand.

The young basswood trees should be grown in nursery rows and the young trees transplanted to their permanent location at the age of one year. The trees should be set out as soon as the frost is out of the ground in the spring and should be given protection from cattle and fire. Cattle, especially, do considerable damage to young trees by eating the small branches and foilage.

THE WILD BEES OF IOWA.

LESLIE A. KENOYER, TOLEDO.

The interest of the beekeeper centers about that order of insects which the scientists call Hymenoptera,—the order that is marked by the possession of four membranous wings. This is a most remarkable order,—the most remarkable, in fact, of the dozen or more into which insects are divided. It contains no less than 25,000 different species, and is preeminently noted for the complexity of its instincts and habits, for division of labor among the occupants of the home, and for actions that seem almost to be governed by intelligence. Here we find the saw-flies,—parents of some of our crop destroyers; the horn-tails, whose young are borers in wood; the gallflies, responsible for the remarkable formations that appear on oak leaves; the ichneumon flies which challenge our wonder and admiration for the derrick-like device which enables the mother to drill a tiny hole in wood and place her egg besides the victim of her offspring,—a wood-boring insect. Here also are those matchless little socialists, the ants, the sole aim of whose existence seems to be the welfare of the colony. Here we have the wasps, the myriads of wild bees, and finally those bees which are so well known to the apiarist,—the climax of the order from the social as well as from the economic standpoint.

In assigning my topic the president meant not those members of the old world hive bee family which have escaped from cultivation by swarming to the woods and making their domicile in some hollow tree to be unmolested save by bee-hunters and hungry bears, but the hundreds of species of native bees unnoticed by the non-initiated but none the less present and at work wherever flowers bloom.

Scientists divide orders into families. of the thirty-four families of Hymenoptera represented in our country, only two include bees in the strict sense of the word. The members of seventeen of these families are commonly termed wasps. And since wasps are so much in evidence about flowers and doubtless play their part in pollination, we cannot omit them from our discussion. How do wasps differ from bees? We cannot safely judge by the shape, for some wasps are short and chubby and some bees long and slender. The primary difference is the food on which the young are reared. The infant wasp is fed upon insects, while the bee is reared upon a purely vegetarian diet of pollen and honey. The female bee, or the worker among the social bees, has the tibia of her hind leg flattened and bordered with a fringe of hairs, making it a pollen basket in which she may carry her pollen burdens to the hive. The wasp has a round tibia and no pollen basket.

Our early introductions to the wasp world are generally of such a nature as not to appeal to our sense of comfort, but if you do not think wasps are interesting just read Peckham's book on wasps, or better yet, get out on some warm summer day,—the warmer the day the more active the insects,—and study them for yourselves. The better you know them the more admiration and love you will have for them. In-

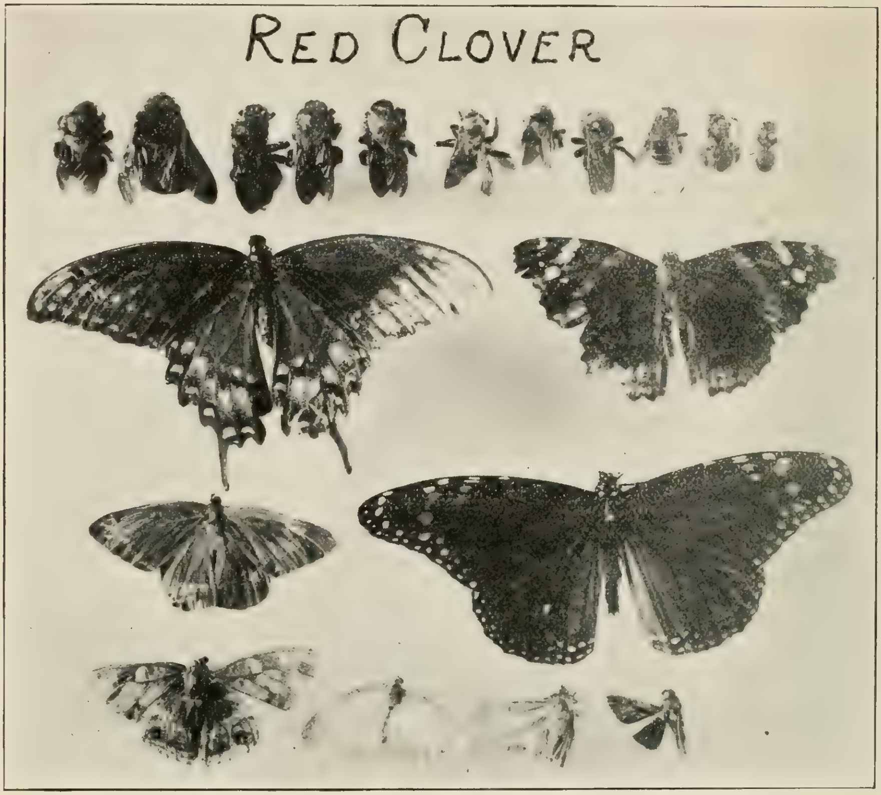


Fig. 1. Insects that visit red clover.

stead of remarking, "Go to the ant, thou sluggard," Solomon might as well have said, "Go to the wasp."

In a hornet's nest we find the same division of labor that occurs in a bee hive, but not quite so complete. The queen alone lives through winter. In the spring she gathers a bit of fiber from some old weathered post, makes a few cells, lays her eggs, catches and chews up caterpillars for her young, and rears them into workers who soon take upon themselves the duties of home enlargement and food-gathering. The queen is now able to devote her whole time to egg-laying, hence by fall the colony may number into thousands.

Contrasting with these, and far more numerous in species, are the solitary wasps. There are no workers among these,—merely males and females. The female digs her nest in the ground, bores it in wood, molds it of mud, or adapts some convenient cavity already prepared. In this nest the food insects, varying in number and kind with the species of the wasp, are stored after having been stung in the nerve centers by the mother wasp so that they may not become too active and

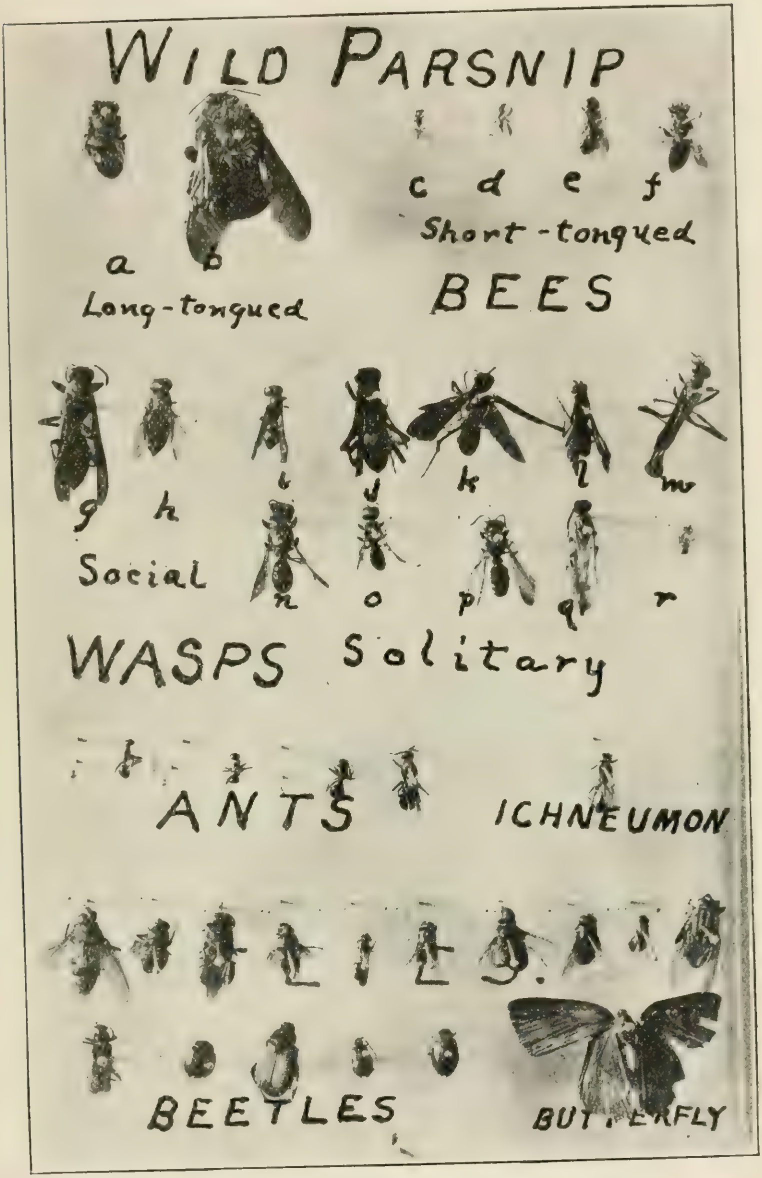

WILD PARSNIP
a
b
Long-tongued
c
d
e
f
Short-tongued
BEES
g
h
i
j
k
l
m
Social
n
o
p
q
r
WASPS
Solitary
ANTS
ICHNEUMON
BEETLES
BUTTERFLY

Fig. 2 Insects that visit the wild parsnip.

unruly but yet are likely to remain alive and furnish fresh food for the waspling. With them is placed a single egg, then the mother leaves. Some species of wasp mothers never see their offspring, while others return at intervals to bring fresh food.

One wonderful thread-waisted creature, the sand-loving Ammophila, is said to take a small square pebble in her mandibles to tamp the filled-in shaft in which she has placed her larder and laid her egg, so that it may appear undisturbed like the surrounding soil. Man has been defined as the tool-using animal, but here we have the remarkable example of a wasp that uses tools.

But, you ask, what is the practical import of all this? Well, the grown-up wasp departs from its early dietary training and acquires a taste for the sweets from flowers. The flower is its dining table, not its field of labor. It is the Nimrod of the insect world, and devotes its busy hours to the chase, whereby it satisfies the needs of the home. Still it must tarry at the flower bed to meet its own personal needs.

Since it does visit flowers in its blustering sort of way, it is bound to carry pollen. For several reasons it is a less important agent of pollination than is the bee. Its season is shorter,— very few being seen on fruit blossoms in spring and on the last lingering dandelions and asters in fall; then because of the hunting habit that we have mentioned the wasp has less time during the day to spend on the flower than has the bee; it has no pollen-baskets and does not intentionally gather pollen; it is generally less hairy, and its hairs are simple, not branching and feather-like as are those of the bee,—the wasp's body under the microscope appears as a field covered with telegraph poles and not as a miniature forest as does that of the bee. But most of our showy flowers have sticky pollen-grains, which will readily adhere upon contact with the hairs of the wasp. A medium-sized wasp, Cerceris clypeata, which we collected from golden rod, was found to have on its body two thousand pollen grains of several different kinds.

Some flowers are preeminently wasp flowers. Possibly their nectar is not apreciated by bees. Among such we might mention the dogbanes and the green milkweed. On a plot of this milkweed four feet square on July 22 there was seen but one honey bee during the entire day, while there was an average of fifteen wasps on hand all day long. The dogbanes and milkweeds have a treacherous way of trapping small insects, and it may be that some of our wasp visitors are really trappers and are in quest of the insects that the flowers catch. But the majority are undoubtedly after mectar, for their insect food is of a type wholly unlikely to be found on milkweed blossoms. Now the pollen of the milkweed clings together in a peculiar way, and is jerked out by the foot of the visiting insect. Fig. (4) Wasps taken from milkweed usually have one or more of these pollen masses on their feet, hence it would appear that they play some part in the pollination of this plant.

Passing on to the true bees, skilled gatherers of pollen and honey, we find two families, the short-tongued and the long-tongued bees. This distinction is an important one, for, as we shall see, it determines what flowers the bees may visit. The short-tongued bees are all solitary, each

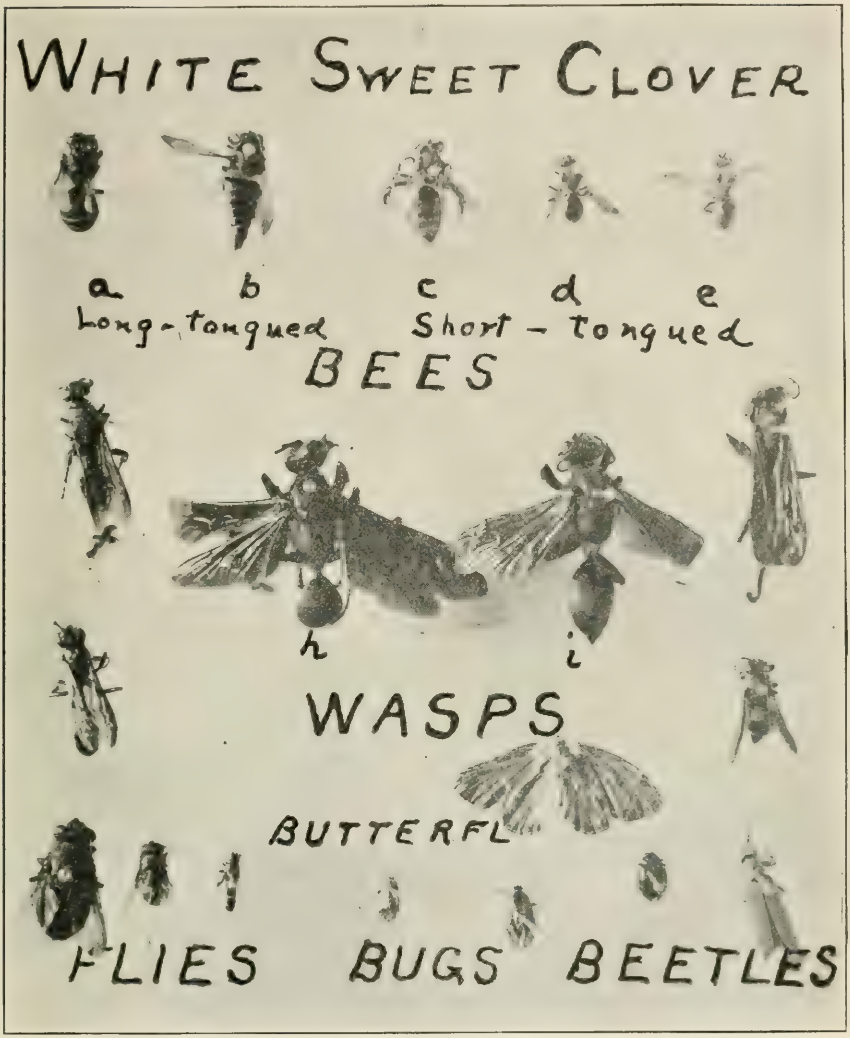

WHITE SWEET CLOVER
a
b
c
d
e
Long-tongued
Short-tongued
BEES
f
j
h
i
WASPS
BUTTERFL
FLIES
BUGS
BEETLES

Fig. 3. Insects that visit sweet clover.

female having the sole care of her own offspring, while the long-tongued ones are either solitary or social. Our natives social bees are all bumblebees. The honey bee probably comes from Asia. In the tropical parts of the earth are minute stingless bees that form much larger colonies than our honey-bee.

The more common of the short-tongued bees are the miner bees—those that dig in the ground for their combination storehouses and nests. Andrena, a smoothish black bee, with the rear part of the abdomen fuzzy, is a common example. Each Andrena female stocks her own larder with the requisite ration of pollen and honey, lays her egg, then closes the cell and leaves her offspring to begin life unattended. Several Andrenas may dig their shafts close together, however, the result being a neighborhood of homes.

Another miner, smallest of all the bees but very abundant, is Halictus. It is no larger than an ant. We were all brought up, I believe, to call it the sweat bee. Several of these unite and form a common vertical shaft, from different levels of which they make side passages extending to their individual cells. "While Andrena builds villages composed of individual homes, Halictus makes cities composed of apartment houses."

Similar to Andrena in its building habits is Augochlora, a familiar bee of a beautiful metallic green color. Last summer this bee was found in considerable numbers on the hollyhock, the copious pollen of this flower being to the bee's particular liking.

Certain bees of both short-tongued and long-tongued families are called cuckoos, for like the roguish bird of that name they slyly place their eggs in the cells of the industrious solitary bees. These cuckoos are often brightly colored and some of them might be mistaken for wasps.

Some of the long-tongued solitary bees bear a striking resemblance to our friend, the honey bee. In our study of pumpkin blossoms and their visitors, last summer we saw sipping the copious supply of nectar from the cup under the stamens, wherever by good fortune the stamen tube had a fissure large enough to admit of the insection of a proboscis, bees that were just the size of the hive bee but were little off color. A study of the wing-veins, which vary so greatly in different bees as to furnish our best standard for classification, told us that most of our pumpkin visitors were not honey bees. All of them, however, had a remarkable number of the huge pollen grains of the pumpkin upon their bodies, and as they jostle against the spreading sticky stigmas of the pistillate blossom the latter is no doubt furnished with its most effecacious mode of pollination.

One familiar family of long-tongued bees is Megachile, a whitish fuzzy individual with the tip of the short abdomen partly turned up. Mrs. Megachile is a leaf cutter who lines her cells in the hollow of some stem with bits of rose leaf deftly cut out by her mandibles.

The bumblebee, less diligent than its better known cousin, and having a less elaborate division of labor, is nevertheless a most interesting creature. There are drones, queens, and workers as among the honey bees, but the colony, instead of containing many thousand individuals, has at best but a few hundred. As in the case of the hornets and yellow jackets, only the queen lives over winter. In the spring it is necessary for her to build up the colony by her unaided efforts until she can be relieved by her first worker offspring.

Very like the bumblebee in appearance is the guest bee who makes herself at home in the bumblebee colony. She does never a stroke toward the task of provisioning the colony, although she does build cells for her own eggs. There are no workers among these bees, for the entire task of gathering food, feeding the young, and housekeeping in general, is left to the host. Why the bumblebees tolerate so lazy a

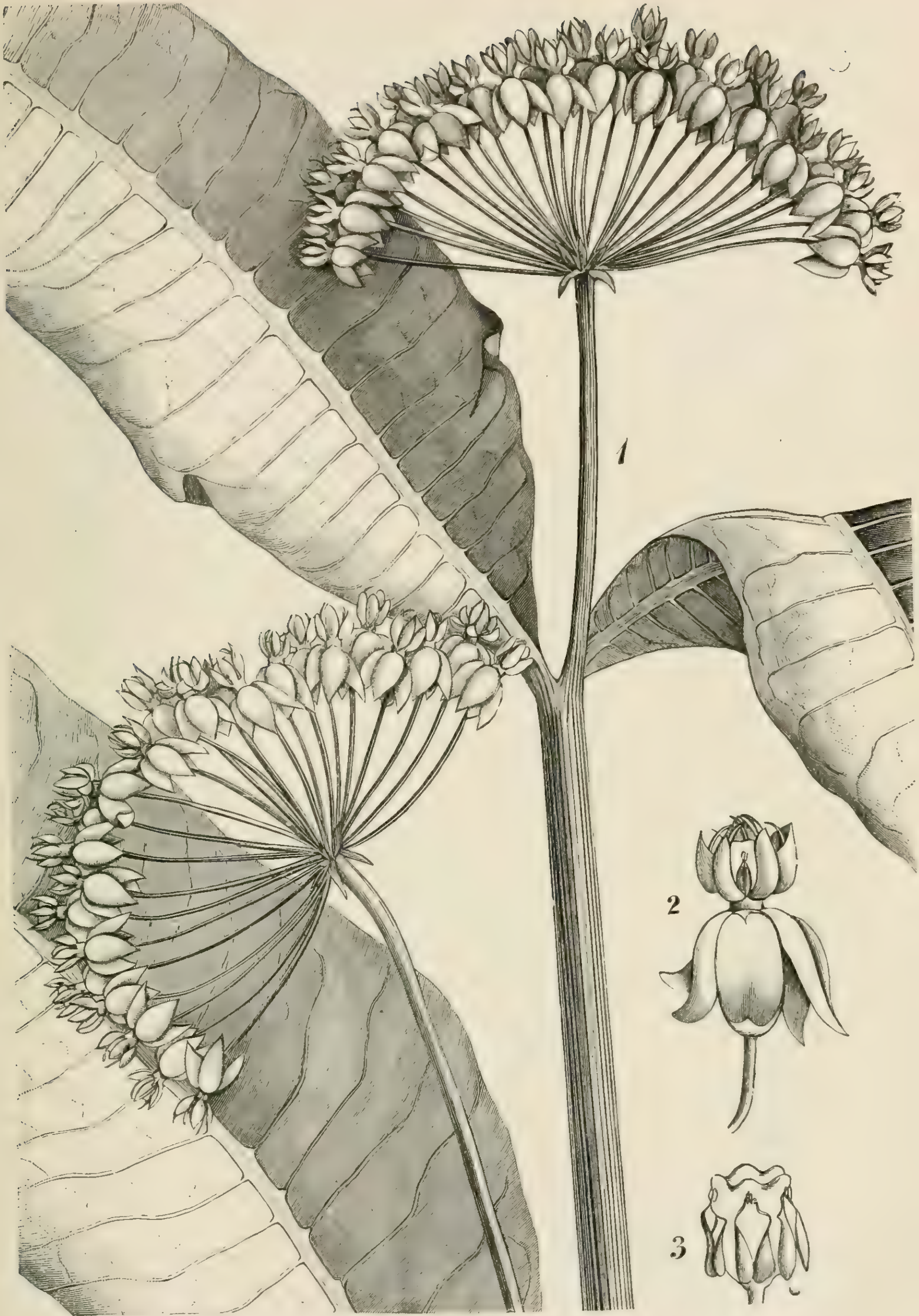


Fig. 5.

Milkweed (*Arclepias syriaca*). Frequently visited by bees. They become, however, entangled in the pollen masses. The related Pleurisyroot is a good honey plant. (U. S. Dept. of Agrl.)

visitor is not understood, but it is altogether unlikely that they are familiar with the purpose of the intrusion or are aware that it will mean more hungry mouths for them to feed.

After a hasty study of the insects that were collected from a number of flowers at our state experiment station last summer, I have concluded that flowers should be divided into three general groups as regards their insect visitors: First, those with nectar at the base of elongated tube and accessible only to butterflies and to bees larger or longer-tongued than honey bees—the bumblebee flowers; second, those with shorter tubes and nectar accessible to honey bees, but not to the majority of short-tongued bees, ants and flies—the honey bee flowers, third, those that are not at all exclusive but expose their nectar to all comers—the fly and ant flowers. I wish to consider these three groups separately. The insects illustrated represent the species seen upon and collected from flowers of a typical plant of each group. These collections make no pretense toward being complete, though they do represent considerable time and study and, I think, show the facts pretty well.

I chose red clover as a type of Class I (Fig. 6), the long-tubed flowers, partly because of its abundance and partly because of its economic importance. It is a well known story how the red clover when introduced into Australia absolutely failed to mature seed until bumblebees were taken to that country. Now bumblebees are plentiful, and large crops of clover seed are produced. Notice that the honey bee, at the right end of the first row (Fig. 1), is the smallest of the visitors—the rest of them being large solitary bees, bumblebees, butterflies and moths—the elite of the insect world. The other hosts of nectar-loving insects have nothing to draw with and the well is deep. Indeed the honey bee, which seems rather out of place here, is generally rare in its visits, although considerable numbers of them were seen during the dry weather of August, when the scarcity of other picking induced our little friends to undertake the heroic.

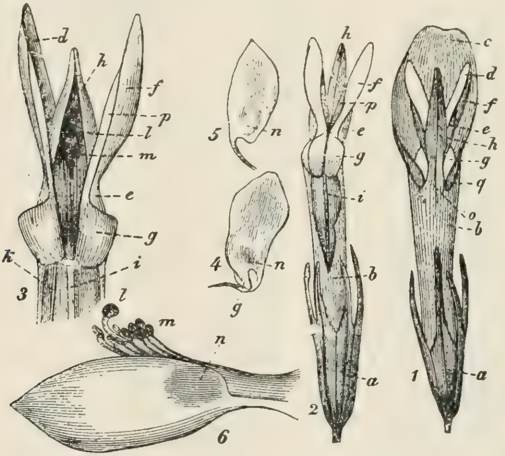


Fig. 6.

Flowers of Red Clover (*Trifolium pratense*q. 1, 2, 3, flowers from below, showing *k*, keel; *w*, wings, *c*, standard; 4, 5, wings; *a*, calyx; *m*, stamen; *l*, style. Honey bees cannot get this nectar because it is out of reach of the tongue of the insect. (Mueller.)

Other plants of the same group are toadflax, thistle, lobelia, bindweed, pumpkin, and bergamot or horsemint. Pumpkin was visited by honey bees but comparatively seldom. Horsemint, also, numbered honey bees and even some smaller bees among its visitors. The whole corolla is covered with glands which exude an aromatic substance, and this may be a means of attraction. There is a wild bee which sometimes bites through the corolla tube, and steals the nectar, without giving the plant anything in return. The honey bee is ready, when it can find such an opening, to make use of the short cut to nectar that it affords.

As a type of the second or medium-tube group, I have chosen that plant which is rapidly coming to the front in the favor of beekeepers, the white sweet clover. Possibly its tube is a little shorter than the average of this class. White clover might have been a bit more typical, but for some reason white clover did not produce nectar this year. This reason is, as yet, one of the unsolved problems of botany.

Among the visitors of this flower easily first is the honey bee (a). Only on a few unseasonable days was this bee surpassed in numbers by another insect, and this is a large white-faced fly (first insect of fly row in figure) that is nearly always present on the flower. I must say that whatever may be the honey yield of sweet clover, my studies this summer have given me a very high opinion of its power to attract bees. (Fig. 3) When white clover is left alone, when buckwheat ceases to attract, when other recognized honey plants pass unnoticed, sweet clover is veritably humming with bee life and activity.

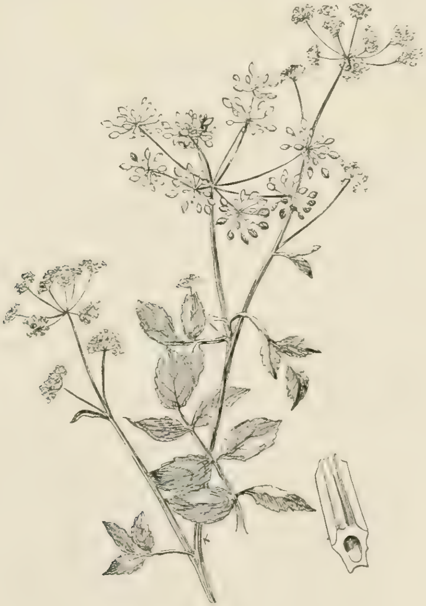


Fig. 7.

Wild Parsnip (*Partinaca sativa*). Pollinated by flies and bees. Nectar shallow. (Charlotte M. King.)

In the collection illustrated there is another long-tongued bee—a cuckoo bee (Coelioxys, b), which entrusts its young to the care of the leaf-cutter bee. There are also three short-tongued bees—the miner bee (Andrena, c), and two bright-colored cuckoo bees which impose upon miner bees (Spechodes d. and Nomada, e). The wasps gathered are all solitary. There are two huge caterpillar-gathering ground wasps (Sphex h and i), a spider-catching mud wasp (Pelopeus, j), and several smaller wasps. A few species of flies sip from this flower, also a few small butterflies, such large scale-winged creatures as the monarch and swallowtail seeming to steer clear of it. As the bugs and beetles are probably not after nectar, we pass them by.

Although we had clover plots under hourly observation for four days, only one bumblebee was noticed. This creature was evidently either a novice untaught in the traditions of the bumblebee world, or a pioneer in quest of something new.

To the honey bee group of plants also belong several other important plants of the clover type—the yellow sweet clover and the white and alsike clover. Here also are the vervain, which fills so many of our pastures and keeps the bee world busy for most of the summer; the woodsage, catnip and motherwort among the mints; and in the sunflower family the cup-plant, heliopsis, crown-beard, Joe Pye weed, thorowort, and others.

The third class, that of the tubeless flowers, will here be represented by the wild parsnip (Fig. 7), a yellow-flowered weed which comes to us from Europe and is the original of the parsnip of our gardens. I chose the flower because of the wonderful variety of its insect visitors. The fleshy disk which secretes the nectar is fully exposed, and this, together with the conspicuous color and odor of its umbrella-like clusters, enables the flower to serve as the banquet-table for the multitudes.

Let us notice a few individuals of this vast assemblage (Fig. 2). First, there is the honey bee (a), eager to get a proboscis in the competition for sweets. Then comes a burly bumblebee (b), whose tribe is not very abundantly represented. There are several of the smallest of the short-tongued miner bees (Halictus c, d, e), a race that is denied admission to the two first types, and a cuckoo which lays in the mine of Halictus (Sphecodes, f).

Next are twelve species of wasps: The socially inclined being which inhabits the well known paper nests that hang from our ceilings (Polistes, g); the yellow jacket which builds a huge home of paper, generally in some underground cavity (Vespa, h); a little wasp which commonly adapts a hollow stem, a key-hole, or some other ready-made cavity, and stocks it with little caterpillars (Odynerus, i); two kinds of burrowing wasps that prey on spiders (Pompilus, j and k); a potter wasp that builds of mud or clay and fancies spider meat for her children (Pelopeus, m); a brightly colored little wasp which Mr. Peckham found storing white-winged moths in its tunnels in an old rotting log (Crabro, o); a burrowing wasp that begins life on a diet of beetle flesh (Cerceris, p); a little wasp probably protected by its resemblance to a fly, for it catches flies to place beside its egg and furnish ready meat for the waspling (Oxybelus, r). Such a wonderful variety of habits as we find among the wasps, and such a diversity of meats as are used by their young! Yet the parent wasps all find a common meeting place on the parsnip umbel, where they may satisfy their longing for sweets. The parsnip is a cafe at which the ants also are most welcome, though their limitations exclude them from more stylish places. Here we found an ichneumon fly whose young is a parasite feeding upon a living insect grub. Ten kinds of flies are fed here. There is a small butterfly, the larger members of the tribe being where the picking is better. Here are also five beetles, some of which, the lady beetles, are after an insect diet.

The third class of flowers, which we have been considering, falls into two natural subdivisions; those which make an appeal to some of the larger insects, honey bees at least, as well as to insects which are restricted to exposed nectar, and those having as their attendants only the smallest insects, such as the little mining bees, the ants and the small flies. I think that the former secrete more nectar, and that more is required to attract a bee than to attract a wasp, moth or fly. A hint that such is the case comes from the study of buckwheat, which is visited by the bees only during the early forenoon hours, but by these other forms all day, even after the bulk of the nectar has been removed. It is also noticeable that generally those flowers of the subclass which the bees visit are in more conspicuous clusters, while the others are more scattered. Doubtless the massing of color has not a little to do with their attraction for bees.

To the first subdivision belong along with our parsnip, the basswood, the elder, the buckwheat, the heartsease, the dandelion, the goldenrod, and most of the blossoms of our fruit trees and plants. In the second, those that scarcely make an appeal to honey bees, we find yellow hop clover, purslain, wild lettuce, buckhorn, mustards, yarrow and others.

As yet our work has given us no experimental knowledge of the role of wild bees in pollination. There can be no question, though, as to the importance of insects, especially bees, in the pollination of flowers, and there is no set of correlations in nature nicer than that between the varying types of flowers and the varying types of insects.

I shall give an illustration to show how amply able are the bees to take care of the details of pollination. On July 14, 1914, I kept under close observation for a day a clump of white sweet clover of about three by twenty feet and about three feet high. There were about 4,000 spikes of 20 flowers each, or 80,000 flowers in the patch. About 55 honey bees, on an average, put in nine hours work here. Each bee visits 40 flowers per minute. Hence there were, during the day, 55x9x40x60 or 1,188,000 visits of bees to these flowers—an average of fifteen to a flower. Of wild insects at least five more visited each flower, giving each twenty insect visits in all. This ought to be amply sufficient to pollinate every flower in the clump, and that such visits are necessary, was shown by covering a few of the buds with muslin to exclude insects, and noticing that these buds failed to mature seeds.

The fact that there are so many wild bees raises some interesting problems for the beekeeper and the horticulturist. Two shall be mentioned.

Do wild bees compete with honey bees and limit their honey supply? The fact of different flower levels adapted to bees of different tongue lengths make this competition less keen than it might otherwise be. Many of the wild bees seem to care much more for pollen than for nectar, and this may be a fortunate circumstance. Still it is probable that the numerous bees and other insects which work on the same level as the honey bee must take enough of the nectar to make some difference in the supply for our hives, and that they would cut some figure in the problem of overstocking.

Are the wild bees alone able to pollinate our farm and garden plants, making the honey bee an unnecessary acquisition from this standpoint? Nobody can see one of the former almost staggering along with its load of pollen without having a profound respect for its ability as an agent of pollination. The experiment station proposes to do further work on the pollination problem. So far, the best expression I have heard on the subject is that of Dr. Gates of Amherst—that while the wild bees might do the work, they cannot safely be depended upon because they are not under our control. Some fluctuation of weather or other conditions might occur as to diminish their numbers to such an extent that our fruit crop would be left sadly in arrears were we to leave the entire task to these creatures of the wild.

A NEW METHOD OF USING SPLIT SECTIONS.

DR. L. D. LEONARD, MINNEAPOLIS, MINN.

Last year at the Minnesota Beekeepers' Association meeting I presented to our beekeepers a new bottom board feeder. This feeder we named the Minnesota Bottom Feeder.

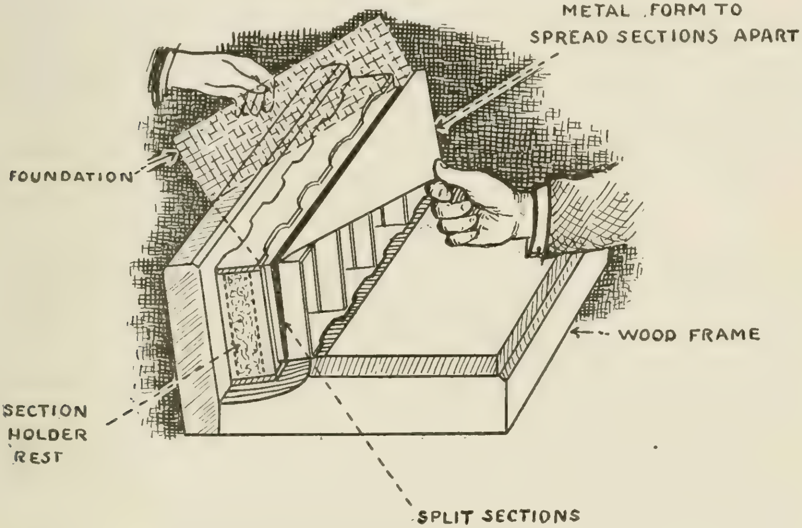
This year I shall present another appliance which we are going to call the Minnesota Foundation Fastener. Your committee has been kind enough to ask me to demonstrate the usefulness of this appliance at this meeting, an honor which I surely appreciate.

This appliance consists of a platform 10x20, a back 6 inches high set at an angle of 120 degrees. On the front side of this back is placed a form which fits the inside of a section holder and allows it to slip on a little more than half its width. The angles and bevels must be made in such a manner that when the sections are in place in the holder their outer edge rests on the platform, thus making them more firm while spreading the kerf.

The speading is done by a tin or iron plate, the length of the section holder with an edge turned at right angle which slips into the kerf.

Unlike the British beekeeper, the American beekeeper has not as a general rule taken to the split section. I cannot account for this except that it takes too much mental effort to make the change. The habit of using the old style section is formed and beekeepers, as a general rule, are not progressive or at least have not been so until recently. I understand Mr. Hand of Ohio, the most practical and progressive beekeeper in the United States, has been using the split sections for some time and so will every other beekeeper if he will take the time to note the advantages.

Before speaking of these I wish to call your attention to the amount of handling necessary in putting foundation in the old style section.



DR. L. D. LEONARD METHOD.

First. In putting the sections together you must use a hammer after which you put them out of your hands into a pile; two lost motions: viz, taking up and laying down the hammer and putting the section out of hand.

Second. Cutting up foundation the right length to fit the sections. Lost motion entirely.

Third. Filling and lighting lamp and adjusting the foundation fastener. Picking up section and foundation, adjusting same on fastener and making the motion necessary to attach the foundation to the section. Again laying aside.

If attachment to the sides of the sections is desired it necessitates having a fire, melting wax and flowing it down each side. Now repeat all this if bottom starters are used. Almost all of No. 3 is lost motion and entirely unnecessary.

Fourth. Picking sections up again and putting into section holders and then into supers.

Now with the Minnesota Foundation Fastener the motions are:

First. Place section holder on form. Put sections together with your hands and place all four in section holder, one after the other. No lost motion.

Second. Place metal retractor in sawkerf in section and while spreading put in sheet of foundation. Push down until the upper edge will just be caught by the two sides of the kerf when the retractor is removed.

Third. Remove section holder and sections complete. Lay flat upon platform in front, press section holder down (a motion which shoves the sections into place) and the process is complete.

If you wish to put in bottom starters, cut your foundation in strips the right depth. Push the wide strip to the bottom of the kerf, the narrow at the top, press into section holder as before, turn upside down and there you are, with no possibility of displacement of foundation.

There is no patent on the Minnesota Foundation Fastener. You may make them for yourselves or by sending one dollar to the Minnesota Bee Supply Co., Minneapolis, you can get one ready made. Your dealer will furnish you with split sections and your foundation maker will furnish you with foundation cut to suit you. Always get foundation a little longer than the four sections to make sure that both ends will be caught.

GLIMPSES OF SOME IOWA BEEKEEPERS. By Frank C. Pellett.

1. Home of E. E. Townsend, Ft. Dodge, Iowa. 2. (To the right, at the top), auto used by E. E. Townsend, Ft. Dodge, for outyard work. 3. Home of J. I. Wiltsie, Arlington, Iowa. 4. Bert A. Brown's apiary, Des Moines, Iowa (a beekeeper who sold $1,500 worth of honey from a town lot in 1913). 5. Irving Wernick, Lake City, Iowa (produced $1,000 from 40 colonies in 1913). 6. Home of J. H. Meloy, Ft. Dodge, Iowa.

GLIMPSES OF SOME IOWA BEEKEEPERS.

7. J. H. Meloy, Ft. Dodge, keeps 98 colonies in the rear of a town lot. 8. Home of J. L. Strong, Clarinda (50 years a beekeeper). 9. B. A. Aldrich's honey-house at Smithland. The finest equipped honey-house in Iowa. 10. Chris Bach and his apiary at Maquoketa. 11. C. J. Barber, Smithland, Iowa (85 years old, and as spry as a boy); still cares for his large apiary. 12. Home of Walter Reppert, Burlington, Iowa.

PART IX

Proceedings of the Eleventh Annual Meeting of the Corn Belt Meat Producers' Association Des Moines

WEDNESDAY, DECEMBER 9

MORNING SESSION.

The eleventh annual meeting of the Corn Belt Meat Producers' Association was called to order by President A. Sykes, at 10:30 a. m.

Prayer was offered by Henry Wallace.

President Sykes read his annual address, as follows:

PRESIDENT'S ADDRESS.

Mr. Chairman and Gentlemen of the Convention:

We have again assembled in the capacity of delegates and members of the Corn Belt Meat Producers' Association, to hold the annual meeting and transact the business of the organization, and on behalf of the officers, I wish to extend to you a hearty greeting, and assure you that we are very glad you are here. We hope that each member present will feel perfectly at home and free to take part in the meeting, as I am sure that you will enjoy greater benefits from it if you participate freely in its discussions.

As your president, it behooves me to again make to you a somewhat summarized report of the work for the past year, and it is my desire to address my remarks also to the many hundreds of members who are not with us in this meeting. I have always felt that if we could interest the members who do not attend these meetings, to the same extent that we do those who come, the future problems of your organization could be easily solved, as we always find a booster in every member who has attended an annual meeting.

I think you will remember that the consensus of opinion was that the last annual meeting was the biggest and best one we have yet held, and a real wave of enthusiasm and good fellowship pervaded the assemblage. We trust that the same spirit will be liberally manifest in this 1914 gathering.

During the winter of 1914, your president, as has been his custom in the past, took up the work through the farmers' institutes and other gatherings, and continued to spread the gospel of the Corn Belt Meat Producers' Association among the farmers, urging them to get in line with the only really live farmers' organization in the state, and help boost it along. In this we were fairly successful, holding some good meetings in territory where we were already organized. We also managed to push out into some new fields, but this I found very difficult, because men were either afraid to take the responsibility of calling a meeting, or else were indifferent to their own interests. At any rate, a number of meetings which we had expected to hold in new territory fell through, and, I think, for lack of proper leadership among the local men. So you will readily see that it is no easy task to arouse interest under such conditions.

During the winter we also endeavored to keep close tab on the movement of stock trains, and see that unnecessary delays were avoided, as well as to look after the comfort and convenience of the stockmen while accompanying their stock to market. In this we were reasonably successful, as I am sure the past year has seen the best service and accommodations by the railroads for a number of years in the past. I believe that if the Corn Belt Meat Producers' Association and the railroads will co-operate in the future and try to maintain good service to the markets, good and satisfactory results can be secured. It is very gratifying to note that the railroad authorities are beginning to realize that this organization is not antagonistic to their interests, but ready and willing to co-operate with them in bringing about better conditions and a clearer understanding of each other's needs. I am fully convinced that many of our ills can be eliminated when the railroad men are willing to meet us half-way and talk these things over, and co-operate with us to a greater degree in correcting them.

You will recall that the most important matter considered by the delegates at the last annual meeting was the unjust and unreasonable valuation imposed upon the shipper, and other obnoxious features of the present live stock contracts, and that you instructed your officers to proceed with a case before the Interstate Commerce Commission, and endeavor to have those objectionable features of the contracts changed. Accordingly, after numerous unavoidable delays, we succeeded through the Iowa railroad commission, in getting our case properly launched with the Interstate Commerce Commission. We were also able to secure the able assistance and co-operation of the American National Live Stock Association in the case. The commission, recognizing the importance of the matter to the live stock industry, set an early date for the hearing, and, as announced, the hearing was opened at Colorado Springs on July 15th. This association was represented by Judge Henderson, commerce counsel; Mr. Chas. Goodenow, your treasurer, and your president. Judge Henderson also represented the Iowa railroad commission and the state of Iowa. The American National Live Stock Association was represented by Judge Cowan, of Texas, and its secretary, T. W. Tomlinson, of Denver. The live stock exchanges of Chicago, Kansas City and Omaha were also represented by able and efficient men, and the Military Tract Live Stock Shippers' Association, of Illinois, sent its president and secretary.

The hearing occupied two days, and almost all of one night. A large number of stockmen testified as to the value of the different kinds of live stock, and in favor of the changes for which we were asking in the live stock contracts, and the strong combination of live stock interests certainly made a strong impression in favor of our position—so strong, in fact, that when the testimony for the complainants was closed, the railroads, through their attorneys, announced that they would offer no testimony on their behalf, and admitted that the stockmen's testimony was practically correct, and they would not attempt to defend the present low valuation in the contracts, nor the exorbitant increases in the rates where increased valuations were declared by the shipper. They stated frankly that those clauses were indefensible, and should be changed, but indicated their feeling that if the valuations were to be so radically increased, a slight increase in rates should apply, ranging from three to five per cent, upon which contention their arguments would be based. This closed the case so far as evidence was concerned.

In September, the printed briefs were submitted to the commission by all the parties interested, and on November 4th the oral arguments were presented before the entire commission, at Washington. The case was thereupon closed, and taken under consideration by the commission, and we expect a decision about the first of the year.

During this same time, your officers, in conjunction with Judge Cowan, were endeavoring to secure the passage of a bill by congress known as the Cummins bill, which would prevent railroads from limiting their liability by contract, and give shippers longer time in which to file their claims. This bill was re-introduced by Senator Cummins early in the last session, and at once referred to the committee on Interstate and Foreign Commerce, of the senate. The fact that Senator Cummins is a member of this committe gave him an advantage, and he secured a favorable report on his bill, and in June it was passed by the senate by a good majority. It was then sent to the house, where it fared very badly. When introduced, it was at once referred to the committee on Interstate and Foreign Commerce of the house of representatives, where it was allowed to sleep peacefully for some time. But finally, through the efforts of Congressman Bourland, of Missouri, and Congressman Towner, of Iowa, we succeeded in stirring up the committee, and the bill was referred to a sub-committee of seven members. This sub-committee, at the instance of the railroads, finally set a hearing upon it for September 21st, giving us four days' notice for preparation for and attendance upon the hearing. But, notwithstanding the limited time given us, Chairman Thorne, of the Iowa railroad commission; Judge Henderson, Commerce Counsel, and your president, went at once to Washington, and, in conjunction with Judge Cowan, of Texas, and others, began preparations for the defense of the bill before the committee; so that, when the hearing opened, it found the friends of the bill in a position to make a stiff fight for its passage. But we also found a great array of railroad men, representatives of express companies, and many others, including ex-Senator Faulkner, who led the fight against the bill, ready to oppose us at every turn. Arguments were made by Judge Henderson, your president, Judge Cowan, and others, occupying almost two days, as time is measured by committees in Washington. The railroads were then given an opportunity to present their objections to the bill, being in the main to the effect that they felt that the Interstate Commerce Commission should handle this matter, rather than congress. It was generally felt that they made a very weak defense of their position, and it occurred to us that their principal reason for preferring that the Interstate Commerce Commission deal with the matter was because they felt that they might get a little more liberal treatment from that body than they would from congress. Chairman Thorne was held in reserve to make the reply to the opposition, and the closing argument for the friends of the bill, and he certainly did himself and the people of Iowa credit by the masterful way in which he handled the subject and answered every objection. It was the consensus of opinion that the live stock interests had won their case, and we verily believe that had it not been so near the close of the session, with the anti-trust bill and the war tax bill occupying the entire attention of congress, we could have passed our bill without much difficulty. However, under those conditions, we were unable to secure a vote on the bill, but I feel that we are in excellent position to now make a winning fight for its passage, and would urge that every effort be put forth during the present congress to pass this measure. Let us spare neither effort nor money, as I consider it one of the most important measures respecting the live stock industry that has been before congress for some time.

It will be remembered that on account of a recent decision of the United States supreme court, shippers who wished to bring suit against railroad companies, to collect claims on interstate shipments, were forced to bring action in the federal courts instead of their local district courts, as had heretofore been done. This created a very bad situation, and made it both expensive and inconvenient for our feeders and shippers who were forced to go into court to collect their claims. This was at once taken up and corrected by securing the passage of a bill in congress, introduced by Representative Towner, giving shippers the right to commence suit in any district court where the claim did not exceed $3,000. This puts the matter in its former condition, where it rightfully belongs, and should be appreciated by the shippers.

At the present time the railroads are straining every nerve to increase both freight and passenger rates, but their latest and boldest move has been to ask for an average increase of 32 per cent in rates on live stock and dressed meats east of the Mississippi river, in what is known as "official classification" territory, to go into effect December 16th. If this increase is allowed to take place, it will involve the following increases in freight per car from Chicago to New York: On cattle, $13.30; on calves, $22.60; on hogs, $16.60; on sheep, $15.40.

It is needless to say that if this advance is made the Iowa farmer and feeder will have it to pay on all stock shipped east from Chicago on the hoof, and that the packers will also make them pay the advance on dressed meats and packing house products by buying their live stock a little lower.

From the evidence produced in the recent five per cent advance rate case, it does not appear that the railroads are nearly so hard pushed as they would like to have the people believe. It was clearly shown in the case of the Corn Belt Meat Producers before the Interstate Commerce Commission, some years ago, that the live stock business per ton mile was the most remunerative traffic carried by the railroads; and in view of the present unprofitable feeding business, with the scourge of hog cholera and the foot and mouth disease, it would seem that it is a very poor time to impose an extra burden of this sort on the stockmen of the Middle West.

This organization at once filed a protest with the Interstate Commerce Commission, and asked for a suspension of the advances until their reasonableness could be passed upon by the commission; and I would recommend that we prepare to make a most vigorous fight against any advance in the rates on live stock and dressed meats; also that we join with the Co-operative Grain Dealers' Association in opposing the proposed increase in grain rates from Iowa points to Chicago, which have always been recognized as abnormally high.

From some apparently unknown source has come the most violent outbreak of foot and mouth disease this country has ever known. This scourge has cost the feeding and dairy interests of our country millions of dollars, and the end is not yet, for no one can tell where or when this thing will end. So, realizing this very serious situation, and the tremendous losses that would follow in the wake of this dread disease, I would recommend that the Corn Belt Meat Producers' Association take some vigorous action to secure, through congress, a very liberal appropriation for the Department of Animal Husbandry, that it may in the future have ample funds with which to combat this dangerous disease. I am informed that during the present siege, the department has been greatly handicapped in its work on account of not having sufficient funds.

Another important matter to which I wish to call your attention at this time is the hog cholera epidemic, which has infested our Iowa feed lots for the past three years. Under existing conditions, there seems to be but one way to protect the hog raisers of Iowa from the ravages of this terrible disease, namely, to vaccinate while the hogs are well; and even then it does not always prove a sure preventive, as some of the commercial serum is weak and inferior in strength. The last general assembly made a small appropriation for the establishment of a serum laboratory at Ames, and its operation for two years. The money appropriated proved to be entirely inadequate for the work and the needs of the farmers, so that the department at Ames could furnish but a small per cent of our farmers with serum. This situation not only caused much disappointment, but heavy losses to our hog raisers. In view of this unfortunate situation, and in the face of these heavy losses, I would urge that this organization use every honorable means in its power to secure through the incoming legislature an appropriation to be used for the manufacture of serum in sufficient quantities to amply provide for all the needs of our farmers. It occurs to me that any state which can appropriate two million dollars to extend its capitol grounds, and then employ a small army of men to beautify and care for them, could certainly make a very liberal appropriation with which to save, if possible, the hog crop of our state, especially when the farmers pay it all back by purchasing the serum; and I also believe that this state serum should be furnished at actual cost, and that the state should not expect to make a profit out of the business.

It is gratifying to note the rapid increase in the past two years in the number of head of cattle kept on the average Iowa farm. This increase has been so perceptible that anyone circulating around among the farmers can very readily detect it. If this good work goes on, our farmers will soon be furnishing a large portion of our beef to feed the world. This is as it should be. The small feeder can better afford to raise his own cattle than to go to the markets and buy them, because he is always placed at a disadvantage in buying on the market, and usually pays much more than his cattle are worth, while the scalper is the man who profits in the deal. There has been a great hue and cry about the shortage in beef cattle, but if I mistake not, inside of the next three years the supply will have entirely caught up with the demand, and beef cattle may be selling so low that the farmers can not afford to feed them. Much has been said about the high price of beef, but the facts are that in my investigation I have found but few feeders who have made a fair profit on their cattle, eliminating the gain on their hogs and the increased fertility of their land incident to feeding cattle. I am quite sure that this is the experience of a very large per cent of our Iowa feeders. The average person knows but little about the cost of producing beef on the hoof with the prevailing high prices of corn and other feedstuffs, and my experience as a feeder has convinced me that under the conditions prevailing for some years past, it costs from ten to eleven cents per pound to produce this beef on the hoof. I am sure that the results of experiments conducted by the different agricultural colleges will bear me out in these conclusions. This, of course, does not include any allowance for gain on hogs that follow, or for increased fertility of the soil.

So it is easy to see that if anyone is making an unreasonable profit out of the beef business, it is the packer, and not the man who feeds the cattle; and I believe the public should realize that with corn selling at from sixty to seventy-five cents per bushel, and other feedstuffs at proportionately high prices, it is very expensive to produce corn-fed beef, and that unless our feeders do receive high prices for their cattle, they cannot afford to continue in the business. If the committee appointed by congress, under the supervision of the Secretary of Agriculture, to investigate the cause of the high cost of beef, will come to Iowa and spend six months in the feed lots, they can readily acquaint themselves with the cost of making beef cattle, and ascertain whether or not the feeders are receiving an undue profit on the business, or holding up the public on the price of beef.

Another most serious situation that confronts our stockmen is the very radical fluctuation in the selling price of fat stock on the Chicago market. There is positively no justification in a condition or system that says a bunch of steers is worth $10 a hundred on Monday, and only $9.50 on Tuesday; or that a load of cattle on Thursday is worth $9.75, and the next Monday only $9 per hundred. There is absolutely nothing that could justify such fluctuations in prices except the desire of the American packer to take advantage of the situation and bleed the cattle feeders to the very limit. If the run is light on Monday, they bid up a little, and then the shippers decide to ship for Wednesday; but, when they reach Chicago, they learn that the run is a little heavy, or that there are no Eastern orders, or no export demands. The buyers sit in their saddles until eleven o'clock so that the cattle have lost practically all their fill, and then they start out bidding fifty cents per hundred under Monday's market, and the cattle are bought at a price that means a net saving to the packers and shippers of many thousands of dollars on the day's business, while the Iowa feeder comes home sore and utterly disgusted with the whole business. There is no logical reason why our live stock market should not be as stable as our grain market, at least; or for its fluctuating more than ten cents per hundred on account of a little heavier run than was expected. If it were possible for this organization to work out some plan or system that would insure a more uniform and dependable market for our live stock, I would consider it one of the greatest benefits that could be secured. I am not quite sure as to what would be the proper and best course to pursue, but I do feel that this matter should have serious consideration. It is a well-known fact that dressed meats fluctuate but slightly in price. The market changes will very rarely be more than one-half cent per pound, and often for weeks the wholesale price will remain the same, while the market for live stock, which is the raw material, will make radical changes every day. In my judgment, there is no occasion for this difference.

Now, just a word in closing about the work of your association in the past. Our members must ever be reminded that it was the strong arm of the Corn Belt Meat Producers' Association which has secured for them so many important benefits in the past eleven years. Yea, I am almost led to exclaim, "There are more than I can number." But, lest we forget, and our minds grow dim with the lapse of time, let us once more enumerate some of the things that have been accomplished by and through it, so that the younger generation may know whence came all these blessings:

1. It returned the stockman's pass to the shipper.
2. It improved the running time, service and accommodations on stock trains.

3. It secured a reduction in the Iowa rates on live stock of 18½ per cent.

4. It secured a reduction in the rates on feeding sheep from 25 to 50 per cent.

5. It secured, through the Interstate Commerce Commission, a regrouping of the Iowa-Chicago rates on live stock, saving about $100,000 annually to our farmers.

6. It secured an improvement in conditions at the stock yards in Chicago.

7. It secured a feeding-in-transit rate on cattle and sheep from the ranges into Iowa.

8. It obtained the application of the cattle rate and minimum weight on fat sheep to Chicago, making a substantial reduction in the sheep rate.

9. In conjunction with the Live Stock Shippers' Association, of Monmouth, Ill., and a few commission men, it secured a change at the Union Stock Yards, from the "Bubbly" creek or sewage water to that of Lake Michigan, reducing the shrinkage on cattle about 25 per cent, and saving from $15 to $25 per car to our feeders. Figure out for yourselves what it has saved you.

10. It prevented a general advance of 10 per cent in freight rates in 1910, which would have cost our farmers hundreds of thousands of dollars, had it gone into effect.

11. It secured the passage of a bill in the legislature, giving to Iowa a Commerce Counsel, to look after the interests of her citizens regarding railroad rates and kindred matters. This is without doubt one of the most important measures ever passed by the legislature.

12. It made a winning fight to retain the 75 per cent rate on feeding cattle and sheep, which means an annual saving to our feeders of many thousands of dollars.

13. It obtained the adoption of a 16,000-pound minimum car for hogs and a 20,000-pound minimum car for stock cattle within the state.

14. It has been the leading force and factor in the fight to secure the desired changes in the live stock shippers' contract, and the passage of the Cummins bill in the senate.

And would time suffice, what could we not say as to the splendid and important work your organization has done to secure the passage of many important measures, both in congress and our state legislature? But I must desist and leave you, brother farmers, to decide in your own hearts whether or not this association is worthy of your support.

Hoping that the association may live long and prosper, and that much lasting good may yet be accomplished, I will close.

I thank you.

Secretary Wallace then presented his annual report, as follows:

SECRETARY'S REPORT—1914.

Receipts for year		$7,083.43
Disbursements—		
Bank collection fees	$ 80.40	
Annual meeting	105.54	
Directors' expenses	77.16	
Refunds to county associations	230.00	
Contribution to American National Live Stock Association	100.00	
Tent for state fair	9.80	
Stamps, letter-heads, printing, etc.	797.88	
President's salary and expenses	2,199.80	
Secretary's office	1,000.00	
Grand total		4,600.58
Balance for the year		$2,482.82

H. C. WALLACE,
Secretary.

The report of the Treasurer was read by Charles Goodenow, corresponding with the report of the Secretary, and showing a final balance of $3,680.51.

Charles Goodenow: I would suggest that it would be a good idea to have the members signing these pledges instruct their bankers to charge the amount to their accounts, so that the pledges will be paid without the banker creating an expense to notify the member that he has a pledge at the bank for collection. Sometimes the member forgets to pay it, and I think it would be satisfactory to the member, if he intends to pay the association, to have it charged up. Of course, if he has no account, the banker couldn't charge it to him.

The report of the Auditing Committee was read by Jerome Smith, chairman, as follows:

AUDITING COMMITTEE'S REPORT.

We, the committee appointed to audit the accounts of the association, have examined the books of the secretary and accounts and vouchers of the treasurer, have checked each item of expense, and find the books correct.

Balance in hands of secretary	$ 554.90
Balance in hands of treasurer	3,680.51
Total amount on hand	$4,235.41
With outstanding unpaid orders amounting to	371.35
Showing, when deducted, an actual balance of	$3,864.06

JEROME SMITH.
DAVID MUIR.
J. F. EISELE.

Upon motion, the report of the Auditing Committee was adopted as read.

T. D. Rittgers: I would suggest that some of those good things that have been accomplished by this association be placed on a card and sent to each member, so that when a man tells us we are doing no good, we can refer him to that, and not have to carry the president's address around with us. I believe by the use of such a card, the pledges would come easier, and we would get more members.

S. M. Corrie: We all get the annual report, and the president's address will be included in it, but, as suggested, we want something that is easily accessible, something that a man can carry with him and show to his neighbors without a book; and I think, if it is not too much expense, it will be a good thing to have this card in addition to the annual report.

Mr. Thompson: We ought to have a committee appointed to draft what we would like to have on that card. I would like to hear from somebody else, and, if possible, I will withdraw the motion.

Mr. Dawson: I think the suggestion that we appoint a committee to decide what we shall have placed on this card is a good one, because we ought to have it right.

Mr. Corrie: I move that a special committee of three be appointed by the chair.

Motion submitted and declared carried.

The President: I will appoint as the Committee on Resolutions the following: James Brockway, D. P. Hogan, Jerome Smith, A. L. Stephens, D. W. Anglun, Wm. Larrabee, David Muir, Joseph Eisele, S. M. Corrie, J. B. Dunning, R. M. Gunn.

At this meeting, the term of the directors in the odd-numbered districts expires: J. M. Brockway, in the first; David Muir, in the third; Mr. Arney, in the fifth; Mr. Westcott, in the seventh; T. L. Meyers, in the ninth; Will Drury, in the eleventh. You should hold your caucuses some time before the time for the banquet this evening, at which the nominations will be confirmed by the convention.

The other committee will be announced after lunch, and we will now stand adjourned until 1:30 p. m.

AFTERNOON SESSION.

The President: We have with us this afternoon a man whom I feel it hardly worth while for me to introduce, the Corn Belt members know him so well. He is a man whom we hold in the highest regard of anyone who has ever associated with us. It gives me the greatest pleasure to present to you Hon. Clifford Thorne, chairman of the Iowa Railroad Commission.

ADDRESS BY HON. CLIFFORD THORNE.

Next to my home folks, there is no body of people in the world that it gives me greater pleasure to meet than the Corn Belt Meat Producers' Association. You folks, I feel, are sort of fathers to me, all of you together in one great big lump. I owe all that I have to you.

I have been trying to do what I thought was right as between you people and the railroads. As to interstate matters, I have tried to act as your attorney as well as the counsel for the other consumers and shippers of the state of Iowa. That duty is cast upon me by law and the statute that was enacted in the year 1908.

In the course of my remarks this afternoon, I am not going to discuss state matters that come before the state railroad commission. As I have repeatedly stated before you on previous occasions, I think it would be highly improper for me to do so. As to interstate matters, where I occupy the position of prosecuting attorney on your behalf, I do propose to discuss with you very frankly what is going on, what is being accomplished, and what can be anticipated in the immediate future. I know that the attorneys for the railroads have that kind of conferences with their clients, and I don't see any reason why I should not have such conferences with my clients. I propose to do so, anyway, as long as the law remains as it is today, and as long as I occupy my present position.

You have different sorts of problems and questions confronting you. You always have the poor with you. You have always had and always will have questions of tariff, prison reforms, etc., etc. But in each generation a few great problems loom up above all others, as of supreme importance.

During the latter part of the eighteenth century, regulation of the control of governmental agencies was of supreme importance. The writings of Tom Paine and others aroused the people to the necessity for some sort of a change in the control of governmental agencies. Tyranny of governments had aroused the people to action. That problem overshadowed all others in importance.

In the middle of the nineteenth century came the great Civil War—that tremendous upheaval that threatened the disintegration of this nation. The present events transpiring in Europe demonstrate the supreme importance of that great conflict. If we had had several countries over here in America, instead of the one great, powerful nation that we have, we would probably be wrapped up in similar struggles to that one now going on in Europe.

The invention of the telegraph and the steam engine, the marvelous industrial developments of the past century, have broght with them some great questions. Chief among those is the regulation of organized wealth, and the most stupendous example of organized wealth in the whole history of civilization is the railroad industry in the United States. You and I have been studying some phases of this railroad question. We are pioneering in this movement. We are trying to learn the alphabet of the subject of governmental regulation. Sometimes the progress seems most miserably slow and unsatisfactory, but here and there, I do feel we are picking up lessons that are worth while.

One of the first phases of the question that pounded itself into my consciousness was the importance of having an advocate for the public in these controversies before the Interstate Commerce Commission. Before we became very active in the matter, we found the public had provided itself with a deciding tribunal, but they had no advocate to appear for them. That resulted in our Commerce Counsel law, in the state of Iowa—the first of its kind in the nation. There are other facts that have been gradually coming to the surface during the past two years, that I want to speak of. It has been two years, I think, since I was before this body of men.

Scarcely had the last session of the legislature adjourned, when the task of valuing the railroads in the United States was commenced. Immediately, all of the railroads in the nation united in selecting a committee to represent them in the hearings before the Interstate Commerce Commission. I have attended those conferences. In front there will be a committee of half a dozen men, representing the Interstate Commerce Commission. Before them will be seated one hundred and fifty railroad experts, lawyers and counsel of all kinds and character; over to one side, perhaps three or four lonely, forlorn-looking railroad commissioners. I urged upon our Mississippi valley states the absolute necessity of having the public represented at these hearings, as they progressed. Fifteen billion dollars' worth of property in this country is being valued. In Michigan they say that there should be a contingent sum allowed of about ten per cent; in Massachusetts and Oklahoma, they say two per cent or less, a variation of eight per cent on that one item. That would mean a variation in your national appraisal of over a billion dollars on that one item. Wisconsin says you should find the cost of acquiring railroad property; then they use this as a sort of a multiple in determing the value of land. That would cost the state of Iowa many millions if that principle were adopted. We have in the state of Iowa over $350,000,000 of railroad property. A variation of ten per cent in that sum means in the neighborhood of $35,000,000. I believe the total revenues of the railroads in this state, on state and interstate traffic, are approximately $80,000,000. A variation of ten per cent would mean $8,000,000—not in one bulk, but annually.

We went to President Wilson with the thought. He indorsed it; said he could not make it an administrative measure, but would indorse it and support it wherever people consulted him. That resulted in the selection of one attorney to represent all the people of the United States as their advocate, Mr. Ferrall, at a salary of $6,000 a year. The railroads have ex-Governor Hadley, of Missouri, at a salary of $25,000 a year; Pierce Butler, of Minnesota, and half a dozen other lawyers, constantly on the job, with all of their corps of experts. The thought occurred to me that the representation on the other side was almost hopelessly inadequate.

What are you doing today to offset the efforts of the carriers to make that valuation large? That valuation is going to be the basis of your rates, state and interstate, for the coming generation or longer. Whoever buys the railroads, that will be the basis of the valuation upon which the purchase is made. What are you doing to see that that is not being made too large? If a railroad condemns a little tract of your land, and has a jury trial on the valuation of that property, you hire attorneys and go to enormous trouble to see that your side is presented properly. The judge may be honest, but you are going to play safe; you try to see that he has the facts on your side. A case comes up before the supreme court of the United States; the Standard Oil Company is involved. The supreme court is certainly an able body of men; but do you leave it to the supreme court to decide it and take care of your side? Does the Standard Oil Company leave it to the supreme court to take care of its interests? Not for a single instant; they are there from the beginning to the end. Now, what are you going to do in this national appraisement?

You say you have selected a railroad commission to look after your interests. That is true; we have to do with over $300,000,000 of property in Iowa; our time is occupied in various matters. Valuation requires the expert assistance of engineers, etc.

I went to the committee on Retrenchment and Reform of the last session of the legislature. I urged upon them that the state of Iowa should employ two or three expert engineers to gather cost data, to inspect values in this state, to prepare facts and figures to present to the Interstate Commerce Commission in connection with this valuation, to see that the Iowa values were not exaggerated. I wanted to feel sure that the facts were being gathered correctly when the railroads are gathering their evidence; I wanted to know the other side of the story. If you are called upon to decide any question, and you listen to only one side, your attitude or position on that subject is liable to be biased and one-sided. The committee on Retrenchment and Reform unanimously indorsed my position, and passed a set of resolutions recommending that the executive council provide for taking care of this proposition. All of the members of the executive council indorsed the proposition except one, who was out of the city. When the governor returned, he took the position that the present act, allowing them to make expenditures of that character, provided that they could do so in any proceeding in which the state was interested or a party. The word "proceeding," he said, meant a case in court; it did not mean a case before the Interstate

Commerce Commission. Consequently, we got no assistance from the executive council or the state of Iowa. Today the state of Iowa is not doing anything toward gathering the concrete facts and data on that subject.

I am telling you these facts for this simple purpose: That valuation is liable to consume several years of time. You gentlemen come from all over this state. You represent the very best element in every county in the state. The stockmen are the richest, the strongest bunch of men in Iowa today, and it is up to you people to tell your legislators what you think on that proposition. That can be cared for in the general assembly, if they so desire.

Another proposition is the advanced rate case, that I want to discuss with you briefly. The appropriation given at the last session of the general assembly, two years ago, to the state railroad commission, was $40,000, to take care of rate cases for the two years—$20,000 a year. The leading attorney for one of the railroads in most of the cases that we go into is making that much. For that cost of $20,000 a year which you people are paying to prevent the rate being advanced, or to secure reductions, you have five or six rate clerks, working constantly every working day of the year. We have built up a tariff file of 20,000 tariffs and supplements, properly indexed. We are watching the changes constantly. We have numerous cases now pending before the Interstate Commerce Commission, and within the past year we have secured the first general revision of interstate rates on eight thousand articles to twenty or more states in the eastern and western parts of the country. We have tried to represent you in connection with the live stock valuation clause; we have tried to represent you in many different cases that have been pending. That fund, I told them, could only take care of the actual, ordinary routine work of the commission. Unless something extraordinary developed, we could get along, I told them, with $40,000; that is, $20,000 a year, to take care of our half-dozen rate clerks, from three to five stenographers, one or two statisticians, and pay the traveling expenses and the cost of printing briefs and buying records. The record in the last advanced rate case covered 23,000 typewritten pages. There is not a lawyer in the state of Iowa, I believe, that has ever handled a case involving that extensive a record. We were given twenty days to analyze 23,000 pages, prepare our briefs and prepare for oral argument. You sit down some time and figure how long it will take you to read that 23,000 pages, and then think of analyzing it, producing a book of your own of three or four hundred pages, having it printed, bound and filed.

The law was changed so that if any extraordinary cases came up, the executive council could take care of us under the chapter I referred to. That was the specific understanding before the committee on Appropriations. If there is any man present here who belonged to that committee, I would like to ask him to stand up and correct me if I have not stated that accurately. Since the legislature adjourned, the advanced rate case came up, involving $50,000,000 annually. Every article that you buy or ship east of the Indiana-Illinois state line would have been advanced if that had gone into effect. Where did you get your suit of clothes originally?

Where do most of the things you wear come from? Where does your sugar come from? Where do most of the products of the farm go to ultimately? It is estimated that the great bulk of all our traffic goes to and from that territory. It would have cost Iowa over a million dollars if those advances had gone into effect.

Today we are confronting another advanced rate case. I suppose a good many of you gentlemen produce grain. How many of you men in the room do produce grain to sell? Hold up your hands. It looks to me like there are two-thirds of those in the room who do; over half, at least. There is an advance proposed of one cent a hundred pounds on grain from practically every Iowa point to St. Paul, St. Louis, Omaha, Kansas City, and Chicago. There is also two cents proposed advance to the Atlantic seaboard, and on export stuff. Ordinarily, twenty per cent of our wheat is exported. Most of our corn, however, is consumed in this country. We produced something like 350,000,000 bushels of corn in the state last year. An advance of one cent per hundred pounds would have amounted to over $2,500,000 annually. Where is your capitol extension of a million and a half in comparison? Here we have a proposition involving $2,500,000 every year.

But what becomes of the price of the corn that you don't ship? What is the price of corn at Mt. Pleasant, if it is not the price at Chicago, St. Louis, or some other primary market, less freight rates? If you produce corn to sell to your neighbor, it affects you. If you ship it in the sheep or hogs or cattle, it doesn't affect you unless the hogs or sheep or cattle are advanced also, or the products which are made from those hogs or sheep or cattle. They are proposing an advance of something like thirty per cent on packing house products east. It has been estimated that forty per cent of the live stock that goes into Chicago, goes out on the hoof. They are proposing advances on live stock from Texas to Iowa of three cents a hundred pounds, or in the neighborhood of $11 a car. We asked for all the advances to be put into the one case. The commission granted it, and 1,124 tariffs have been suspended.

Grain and live stock are not the only products concerned. In the past, agricultural implements have been shipped to a given point, partially unloaded, by the purchaser paying $5 for the privilege, and shipped on to the next town. That enables the small individuals to get a carload rate when they have only a small shipment, by paying $5 for the privilege of unloading that shipment at their stations. That has been the custom for some time. Years ago it was done free. They now propose to eliminate that entirely on agricultural implements. Lindsay Bros., of Milwaukee, and the National Implement Dealers' Association inform me that this will mean an advance of from ten to one hundred per cent on the bulk of the shipments of agricultural implements into the state of Iowa.

I am again compelled to say that the state of Iowa has refused to lend the necessary assistance to take care of this stupendous case. The coal men of the east have united in employing two or three expert accountants to do nothing but take care of the coal rates and the most of handling the coal traffic. I believe that that will be absolutely necessary as to the grain proposition. I believe it will be necessary for the farmers of

Iowa to help raise the funds to employ two or three accountants who can center all their efforts on this case, because of its peculiar magnitude. And then, when the legislature convenes, I trust that you people will speak in such plain terms that there will be no repetition of this short-sighted, penny-wise-and-pound-foolish policy. It was not the fault of the committee on Appropriations. It was definitely understood that such situations would be cared for, and any man that says that is not true is telling a damnable lie. I can't look after your interests unless you fellows are willing to back me up.

I have found, sad but true, that it will be necessary for you people to continue your organized watchfulness and care over these matters. The live stock interests and the grain interests and the farming interests of this state must reconcile themselves to that situation. You will have to exercise the same consistent policy of constantly watching and guarding your interests, just exactly as the coal men are guarding theirs, just as the packinghouse men are guarding theirs, just as the manufacturing interests of the large cities are guarding theirs, just as the Chicago Board of Trade watches theirs; it is up to you to do it. Pass what laws you have a mind to; in the ultimate analysis, it comes back to you people to see that that law is lived up to, and if it is not right, to make it right; you have got to keep constantly on the job. The Chicago Board of Trade has its force of men and experts of unquestioned ability on the job all the time. They have confidence in their state commission? Yes. In the Interstate Commerce Commission? Yes. But they are always there. The International Harvester Company, one single company, has its traffic department in existence all the time, going into every case where their interests are liable to be affected, simply to safeguard their side of the proposition.

I wanted to discuss the taxation question, because, through the energies of Mr. Pierce, I was injected into that proposition. I also wanted to discuss the public utility question a little bit with you folks; and I am going to come back here at five o'clock, or ten minutes after five, and continue my remarks on these other subjects. There are some phases of those subjects that have been given hardly any publicity in this state, and I believe you should know certain facts that I desire to state to you.

I am going to close by reading a little paper that I had prepared, thinking that I was not going to be able to get over here this afternoon; but a red-headed man who runs a farmers' magazine induced me to come.

GREATER IOWA.

While this state-wide discussion is going on about a greater Iowa, it might be well to take stock of the situation as it exists today, to make a sort of inventory of things as they are. Where is Iowa greater than other states, and where do they surpass our commonwealth?

Iowa is strong on farms and education; but she is weak on population, factories and churches.

There are many reasons why I am proud of my state, but there are some matters in which improvements can be made, by the concerted efforts of a united citizenship.

1. I find the Hawkeye state has the lowest percentage of illiteracy of any state in the Union, this being 1.7 per cent. I also find that the number of undergraduate students in our colleges, universities and schools of technology exceeds that of any other state in the nation except five, those being Massachusetts, Illinois, New York, Ohio and Pennsylvania. But, remarkable as it may seem, the number of undergraduates per 10,000 inhabitants in Iowa is greater than in any one of those five states, or in any other state save one.

2. We do not rank high so far as corporations are concerned. The net income of all the corporations, joint stock companies, or associations, including commercial, public service, industrial, manufacturing, mercantile, and miscellaneous organizations, engaged in practically all lines of business, in Iowa, in 1912, amounted to $32,000,000. This was exceeded by twenty states.

The number of communicants or members of denominational bodies, including both Protestant and Roman Catholics, in Iowa, in 1910, was 788,000. This was exceeded by seventeen other states, although only fourteen states have a larger population than we do. But we have no poll of the sinners inside of those churches. The real separation of the sheep from the goats will not be made for some time yet. We may have a poor showing so far as our church membership indicates, but Iowa has produced the greatest evangelist in the world, and he is now doing all in his power to correct that situation.

3. We have 9,800 miles of railroad, exceeded only by three states, in the following order: Illinois, Pennsylvania and Texas.

4. One reason why I am proud of Iowa is because she is pre-eminently the greatest agricultural state in this nation. Let us consider a few of our different products. While we excel in some, we are strangely deficient in others. This review will certainly be fitting before this body of men who are the producers of Iowa's greatest crop, a body of men that is representative of those who have made Iowa what she is.

The total value of those things which man has added to the bare land, including farm buildings, farm implements, and tools and machinery, added to the value of our live stock, is greater in Iowa than in any other state. Illinois ranks second.

The value of the products of the land, including our domestic animals sold and slaughtered, added to the value of all our crops in 1910, according to the Department of Commerce and Labor, amounted to $500,000,000. This was greater than in any other state. That remark covers all crops in each state, north and south, east and west, and includes corn, oats, wheat, hay, cotton, tobacco, vegetables of all sorts, fruits, nuts, forest products, cattle, hogs, sheep, goats, horses, mules, and all other crops. Illinois again comes second, then Missouri, Minnesota, and Wisconsin. Poor Wisconsin; we beat her by more than $300,000,000.

Iowa has the largest percentage of cultivated land, this being 86.9 per cent. Illinois again comes second, with 86.2 per cent.

If we could get together in one pile all the eggs our hens lay in a year, and then make an omelette out of it, that omelette would be about three square miles in area, a rather large order. If you would stretch that omelette out into a long string an inch wide, like I have seen at some restaurants, it would make a band of egg omelette 20,000 miles long, about long enough to reach around the world. If we should stand our chickens up in a line, one after another, it would make a column long enough to reach from here to New York City, and back again, and then to New York City once more, and we would have some roosters left over to crow about it.

The value of this hen fruit every year is greater than all the gold mined annually in the famous California gold fields. Our butter crop is greater than all the gold and silver taken out of the Colorado mines annually.

But let us consider some other crops. Missouri beats us in the number of turkeys, ducks and geese. So does Illinois. Missouri beats us again in bees. They did not count the bees, they just counted the swarms, or colonies.

Our wonderful production of live stock places us in the first rank in agriculture in the United States. It is said that 40 per cent of the live stock marketed in Chicago, the greatest live stock market in the world, comes from the state of Iowa.

Outside of live stock, hay and chickens, we fall behind generally.

Wisconsin produces more butter.

Illinois produces more cereals of all kinds, by a hundred million bushels.

We produce 14,000,000 bushels of potatoes; but New York produces 48,000,000; Michigan, 38,000,000; Wisconsin, 31,000,000. Maine produces twice as many bushels of potatoes as Iowa; Minnesota produces more by 12,000,000 bushels; Pennsylvania produces 21,000,000, and Ohio 20,000,000.

Iowa produces 232,000 bushels of sweet potatoes. New Jersey produces 3,000,000 bushels; Virginia, 5,000,000; North Carolina, 8,000,000 bushels. Others higher than Iowa are Missouri, Kansas, Delaware, Maryland, Virginia, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma and California.

Of other vegetables, Iowa produces five million dollars' worth. The Ohio crop is worth $11,000,000, over twice that of Iowa. Other states exceeding Iowa are: Massachusetts, New York, New Jersey, Pennsylvania, Indiana, Illinois, Michigan, Missouri, Maryland, Virginia, North Carolina, Florida, Kentucky, Tennessee, Alabama, Mississippi, Texas and California.

Our sugar beet crop is worth $35,000. The Michigan crop is worth $4,000,000. Colorado's crop is worth $6,000,000. Other states having a bigger crop than that of Iowa are Arizona, California, Idaho, Illinois, Indiana, Kansas, Minnesota, Montana, Nebraska, New York, Ohio, Oregon, Utah, Washington, Wisconsin and Wyoming.

There is perhaps one lesson for us here. Perhaps we should begin to give greater attention, as a state, to some of these other crops, as we may have time from attending to our corn and live stock. Perhaps we have been neglecting some splendid opportunities with this rich soil of ours. Perhaps we can make still greater returns.

Because Iowa is strong agriculturally is no reason why we should neglect further development along these lines, for other matters. The great musician does not neglect his music in order to learn how to shoe horses. The great chemist does not neglect chemistry for literature. We should redouble our efforts, looking to the highest possible development of the agricultural interests of the state. At the same time, we can, and must, take steps of a practical character that will strengthen us along other lines.

5. There is one reason why I am not just entirely proud of our record. Iowa is the only state in the Union which lost population during the past decade. The rural population in such great agricultural states as Illinois, Ohio and Indiana has declined, as well as in Iowa. But their urban population has increased fast enough to more than make up their loss in rural population.

In 1880 over two-thirds of our population was rural, and less than one-third was urban.

One-half of the people in the United States will probably be living in cities within six years from this time. My justification for this statement is as follows: The rate of increase in urban population is indicated by these facts: In 1880 it was 29.5 per cent of the total population; in 1890, 36.1 per cent; in 1900, 40.5 per cent; in 1910, 46.3 per cent, the rate of increase being for the first decade mentioned 5.6 per cent, the second 4.4, the third 5.8, and the next will only have to be 3.7 to carry it over the 50 per cent line. Iowa has not been getting her share of this change in the character of our population.

This has an effect on all of us.

The number of acres of farm lands in Illinois is a million less than in Iowa, and the number of improved acreage in Illinois is a million less than in Iowa; and yet Illinois farm land is worth $290,000,000 more than Iowa farm land. This is probably due, in large measure, to the proximity of the cities. Being close to market is of tremendous importance. You men are interested in building great cities in this state.

6. While our farm products have grown enormously, our manufactures have not kept pace with the rest of the nation. We are long on farms and short on factories. The value of our farming implements and machinery in 1910 was $64,498,000; this was exceeded by no other state. The value of our manufacturing machinery, tools, and implements was $30,413,000; this was exceeded by twenty-six states. Note the size and character of some of these states: Alabama, California, Colorado, Connecticut, Georgia, Indiana, Illinois, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New Jersey, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, South Carolina, Texas, Virginia, Washington, Wisconsin.

Seventeen states turn out more manufactured products than does the state of Iowa. Among these are our neighbors on all sides of us: Minnesota, Wisconsin, Michigan, Illinois, Ohio, Indiana, Missouri, and Kansas. The value of manufactured products in Wisconsin was twice as great as that of Iowa; that of Missouri was twice as great as Iowa; Minnesota exceeded us by $150,000,000; Illinois exceeded us seven times; even that little dwarfed state of Rhode Island was ahead of Iowa.

Consider one line of manufacturing that should interest us. Iowa produces 2,800,000 pounds of cheese annually, while Wisconsin produces 148,000,000 pounds of cheese annually. The Wisconsin production is more than fifty times greater than that of Iowa.

The city of St. Louis has a population less than one-third that of the state of Iowa, and yet the products of her factories are greater than those of all the cities in Iowa put together. The population of Iowa is greater than that of Chicago, and yet that single city manufactures five times as much as all the cities in Iowa put together. Eliminating Chicago entirely, the rest of Illinois manufactures over twice as much as Iowa.

Only two of our neighboring states produce more coal than we do. They are Illinois and Indiana. There are only four states in the entire Union that produce more bituminous and anthracite coal than does Iowa, and we have cheaper power than any of these four; that is, the dam down at Keokuk, Iowa. We have the two greatest rivers on the continent on either side of us. We are in the heart of the richest production on the American continent. The center of population is in Bloomington, Ind., about 220 miles east of the Mississippi river.

Since 1860 the center of the population has moved 200 miles westward and 14 miles northward. This movement has been rather constant, averaging between thirty and forty miles during each decade. Within the lives of those within this room, it is safe to say that the center of population of the United States will be in the state directly south of us, the state of Missouri.

Simply more inhabitants is not what we want. China has a denser population than Iowa, but we would not exchange conditions with China. On the other hand, a better population alone is not what we desire. We want both; we want a larger and a better population.

I have confined my discussion largely to material things. There are matters of far greater moment than dollars and cents, but it would be difficult to compare our state with others morally or intellectually. The task of uplifting humanity has always existed, and always will be with us. Other states have their poor and unfortunate. We must do our part in this great work. We are living in the midst of a commercial age, and I have considered chiefly the industrial development of our state.

With our vast natural resources, with our great coal beds, our cheap water power, close to the center of population, which means the center of consumption, and in the center of production; with the two greatest rivers of the continent on either side of us; with a network of railroads within our borders, and great transcontinental systems radiating in all directions; with water transportation via the Father of Waters to the Gulf and the Panama Canal, and thence to the farthest corners of the globe; with the highest average intelligence in the entire country; here in the heart of the garden spot of the world, this grand old state of Iowa must forge ahead, and take her place in the forefront of the great industrial states of our nation.

CONTINUATION OF MR. THORNE'S ADDRESS.

Gentlemen, I have to leave at six o'clock; that will give me twenty-three minutes, according to my watch—which is a very appropriate number.

In your personal experience I know that you have found this to be true: You reach a conclusion as the result of many facts of which you have personal knowledge. To state the reasons for reaching a given conclusion is sometimes quite difficult in a limited space of time; you can not do it satisfactorily to yourself or to others. I can state to you some of the facts and some of the experiences that I have had which have led to the conclusions at which I have arrived, but I am afraid that you will have to take our conclusions sometimes on faith. The better way to do is to have men of your own organization keeping in constant touch with the matter, and then accept their conclusions, unless you yourselves are willing to take the time to perform the labor to make the personal investigation, which is still better.

I state this as a positive conclusion of my experience: The consumers and the producers of this state and of this country can not rely upon the manufacturers or jobbers to look after their interests. In support of that, I want to cite a few facts. Further, this is true: You are not getting the facts presented to you in magazines and newspapers of today which are necessary to reach an unbiased decision as to issues. I had intended to discuss the taxation in Iowa, but will only be able to touch upon it very briefly.

Two years ago, Mr. Pierce, of Marshalltown, asked me if I could gather some facts relative to the valuation and taxation of railroads in this state. I attended the hearing before the executive council. Mr. George C. White made a few remarks. So far as gathering of evidence and facts on your side of the case, those that I presented were all that were presented. The railroads were represented by fifteen or twenty attorneys and experts. At the last hearing before the executive council, no one presented facts or arguments, so far as I know, in detail in your side of the case. Again, the railroads were represented by a great corps of people. With that method of action, gentlemen, you can not expect your interests to be adequately cared for. The moral effect of that great crowd of people representing one side is tremendous upon the minds of the persons reaching the conclusions.

I am going to read to you just what was stated to the executive council in regard to the taxation of Iowa farms and railroads. I do not know of my own personal knowledge what should be the taxes on Iowa railroads and Iowa farms. Iowa farms may not be taxed enough; I do not know. I am going to present to you some very significant facts:

If the railroads in this state paid the same taxes per mile of line that they do in Minnesota, they would be paying $1,500,000 more than they are. If they paid the same per mile that they do in Wisconsin, they would be paying $1,800,000 more than they are; if the same as in Illinois, $2,300,000 more; if the same as in Ohio, $4,000,000 more; if the same as in Michigan, $2,200,000 more; if the same as in Indiana, $2,900,000 more; if the same as in Nebraska, $905,000 more; if the same as in Kansas, $460,000 more; if the same as in New Jersey, $20,500,000 more. The average taxes per mile of line paid by Iowa railroads is less than in any other state in the northern part of this nation, excepting only South Dakota. They are higher per mile of line in North Dakota, Wyoming, Vermont, and all these northern states.

Further, this letter was sent to the governor of this state:

Hon. George W. Clarke, Governor of Iowa, Des Moines, Iowa.

Dear Sir: In accordance with my statement the other day to the executive council, I am enclosing two copies of a summary of replies to letters concerning the per cent of taxes paid on the earnings from town and farm property.

These percentages have been computed from figures submitted to me covering eighty-seven representative town properties and seventy-eight representative farm properties, scattered throughout the state. The method of selection was as follows: Letters were first addressed to the state representatives, county treasurers, and principal bankers, in nine representative counties (three southern, three central and three northern), requesting the names of a few representative owners of farms, renting for cash in their respective localities. Similar letters were written, requesting the names and addresses of owners of town properties, in nine other representative counties, similarly distributed over the state. Each person was written whose name and address was sent to me. All replies that could be used are included in the summary.

These figures show that the taxes paid make an average percentage of 14 per cent on the gross earnings of farm property; and, further, the taxes paid on town properties make an average percentage on the earnings of town property of 14.9 per cent. A technical objection to this average percentage is that in a number of instances the earnings and taxes from several properties were bunched, which would thereby deprive each property of its individual effect on the final average. But a glance at the series will disclose that this would have no substantial effect on the final percentage, which is approximately correct.

Comparing these taxes to those paid on a few of the principal railroads in Iowa, we find, whereas the percentage of taxes paid to the gross earnings from the representative farm properties in Iowa is 14 per cent, and from representative town properties it is 14.9 per cent, the percentage of taxes paid to the gross earnings on the principal Iowa railroads range from 3½ to 4½ per cent.

The owners of town and farm property in Iowa are paying several times as much taxes as are the railroads, in proportion to their earnings.

This information is very instructive on the proposition as to whether the town and farm properties of this state are bearing their proper portion of our taxes. At first, I thought the percentage on net earnings would be of some significance. But when it was stated at the hearing by all the principal railroad companies, that not one of their branch lines had any net earnings, that method of apportioning taxes would, of course, mean that no taxes whatever would be paid on over one-half of the railroad mileage in the state of Iowa. I challenge the justice of their method of bookkeeping, on the mile-pro-rate basis. It is contrary to the recommendations of the board of directors of the Northern Pacific Railroad Company, which I have filed with you. And it is contrary to their own voluntary actions, when apportioning earnings to branch lines or feeders, when operated by independent companies, as evidenced by the "division sheets" which you can find in the general offices of every railroad company operating in Iowa.

This objection alone is fatal to basing the computations on net profits. But in addition thereto, it may be added that it is extremely difficult to arrive at the net profits from farms. In the computations, cash rentals were preferred to grain rentals, partnerships, or personal management, because of the difficulty in determining the profits with any degree of accuracy. The grain may not have been sold; it may be cribbed for several years, or fed to stock; the labor of the land owner and his family must be estimated in case of personal management of the farm, etc., etc. The owner of a railroad exercises none of the duties or responsibilities of the partner.

Comparisons on the basis of gross earnings have their objections. But, on the whole, I believe it can fairly be stated that gross earnings represent the business done, and to that extent represent the portions of the "expense of government" which should be borne by the various industries.

I do not attempt to state what factor I believe should be controlling. I merely offer this as additional evidence that the land owners of Iowa are today bearing more than their fair share of the taxes in this state, compared to those paid by the railroads.

This work has been done at the request and at the expense of Mr. Frank Pierce, secretary of the Iowa League of Municipalities.

Most respectfully yours,
CLIFFORD THORNE.

In the final makeup of the executive council, they increased the actual value of farms over the previous year $60,000,000; of town lots, $111,000,000; of railroads, $48,000,000. They increased the actual tax paid, including millage increased directed by the state legislature for state institutions and capitol extension, on farms, $1,089,000, and on railroad, $121,000. They increased the taxes on farms nine times as much as on the railroads. They increased the state tax, exclusive of the millage increase directed by the state legislature for capitol extension and state institutions, on farms, $227,000, and on railroads, $1,500.

The only deduction I make from those figures is that it will pay you to have a decent overhauling of the Iowa taxes, and it will pay you gentlemen to be on hand—not 4,000 members of the Corn Belt Association, but your representatives. I state no conclusions.

I had intended to talk to you about the public utilities. There was a public utility measure pending before the last state legislature. The main features of it, concerning the franchise, were practically duplicates of a model utility law prepared by Professor John H. Gray, of the University of Minnesota, while in the employ of the National Civic Federation. At the time that he was in your employ, the executive committee of the National Civic Federation included such familiar names as August Belmont, chairman of the board of directors of the Interborough Rapid

Transit Company; Arthur W. Brady, president of the American Electric Railroad Company; W. C. Brown, president of the New York Central Railroad. Over half—I believe two-thirds—of the executive committee, were officials of public utility and railroad companies, or their employes, or representatives of their employes. In the coming session of the legislature there will be a strenuous effort made to pass a public utility measure. You have no national organization submitting to you a form for a public utility bill. When the law is passed, of course the public utilities will be represented, and they will be on hand at all stages. They are already canvassing every member of the legislature in the state in regard to the bill. They are already drafting model bills. They are entitled to a square deal; they must have it; and no fair-minded man will attempt to formulate any other kind of a measure. Again I come back to the central proposition. It is that the public must have their duly accredited representatives there to follow the matter, to appear before committees; and I advise the greatest of caution in regard to it.

I want to tell you folks, in regard to this gathering of information from magazines and newspapers, one or two little experiences of my own. One day I went into the editorial office of one of the Eastern papers. The editor was an old friend of mine, and I said to him:

"You gentlemen are absolutely failing to give the public both sides of this case. This case is being tried before the American people as much as it is being tried before the commission. Why can't you give both sides? I don't object to the railroads organizing and distributing their information, but why can't you print the other side, when it is being offered in sworn testimony."

He said: "Thorne, I am fully conscious of that fact. I want to hear the other side. Will you take lunch with me Saturday noon?"

I agreed to it. He brought down other people—one of them, Mr. Herbert Quick, one of the editors of "Farm and Fireside," formerly of this state—a very prominent man, who has written several books and many magazine articles, and is a writer for the United Press Association; also half a dozen other men in Washington. I said: "I am sorry you have invited these men; I wanted to talk to you alone." He replied: "You can have the floor. When we get there, I am going to shut the mouth of everybody else in the group and let you talk." "All right," I said; "I intend to give you the other side of this question, and I want you to hear it out." He introduced me to the gentlemen, and we sat down at the table. "Now," he said, "Thorne has the floor, and you other fellows have got to keep still." And I sailed into the proposition and talked three-quarters of an hour. Herbert Quick said: "Thorne, that is a peach of a story! Why don't you write it for a magazine? Just hit the high spots, and send it out; the public don't know the facts that you have stated." I replied, "You can't get that story into a leading magazine in the United States." He smiled at me rather condescendingly, and said perhaps I didn't know his acquaintanceship. One of the men at the table said: "Why, Quick, you can get it into Collier's; you are writing many of their editorials today; you surely can arrange that." "Yes," he replied, "I can easily, but I would prefer to see it in the Saturday Evening Post, because it will reach a million or two million subscribers."

Four years ago, I wrote a little story on railroad expenses and earnings for the Saturday Evening Post, and they accepted it by telegraph. In order to get it into an early issue, they wanted to locate me for the reading of the proof. They paid me $100 for a half a page, and it took me about an hour to dictate it to the stenographer. I would like to make money at that rate a few more hours of my life! I said, "You can't possibly get that into the Saturday Evening Post; they have editorially endorsed the advance repeatedly." I do not think Mr. Lorimer or his force are dishonest, not for one instant. I believe he has been persuaded by the great, strong, shrewd, capable men like President Rea of the Pennsylvania, and other citizens of Philadelphia.

One of the gentlemen at the table said: "I can arrange for a conference between you and Lorimer, and you can surround him for a little while, and see if you can't offset the effect of those former conferences." I told him that he couldn't get that conference. I didn't speak from experience, because I had submitted no article to the Saturday Evening Post upon this subject, or to any other leading magazine in the country, but I knew from their attitude, from what they were publishing, that he couldn't do it. He excused himself from the table and went to the long distance phone. When he returned, he said it was Saturday afternoon, Mr. Lorimer was out of his office, and all the force were gone, and it was impossible to get hold of him, but he said he would write to Mr. Lorimer immediately, and before I got home there would be a telegram or letter started to me requesting me to stop off at Philadelphia on my next trip east for a conference.

Mr. Herbert Quick said: "And, Thorne, just to make this thing doubly sure, I will take it up immediately with Collier's, and you will get a telegram from them requesting a story, and you can take your choice. I will also see that the United Press Association has your story and your picture."

And the editor of the eastern paper said: "You can have two columns of my paper any time you want them. I will contribute my little mite to the cause."

That was Saturday afternoon, last spring. That is Chapter I. Chapter II is as follows: I get home to Des Moines, and there is no telegram from Collier's, and no letter from Lorimer; but there is a letter from this gentleman in the east, enclosing a letter that he had just written to Lorimer, and got a reply to by the next mail, declining any conference. One man in the group did make good. Herbert Quick arranged with the United Press Association—not the Associated Press, and the story appeared, I understand, in something like 500 papers throughout the country, with my picture.

The next time I was in Washington, the editor of that eastern paper amazed me. I received a copy of the paper one evening when Mr. Smith, president of the New York Central, had testified on direct examination that his company was going to the devil as fast as it could, and on cross-examination admitted that their net earnings were higher than any year before in their history, except 1910; and that they made over 11 per cent on all their stock outstanding. Then Mr. Clements, that distinguished old commissioner, leaned forward and said: "Doesn't it rather look as if perhaps during the last few years you have been getting away from the devil as fast as you could?" Not one word of that cross-examination appeared in that eastern daily, but most of the direct examination was printed. That same paper had an editorial endorsing the advance. And one of the leading newspaper associations of this country sent out all over the United States an account of the direct testimony and none of the cross-examination of Mr. Smith.

A day or so later, I was invited out to luncheon at the home of a friend back east. He invited that other gentleman, the editor, to be present at the luncheon, with his wife. I went out to his home. On the way out, I said: "What under the sun has happened to our friend, ——?" "Thorne," he replied, "don't twit him about that. He could not help it. He is a hired man." During that whole evening that hired man was condemning the action of the carriers, and praising my attitude on the whole subject!

One other thing. You have perhaps noticed the statement that I did not have authority to represent those for whom I was speaking. Resolutions were of record in the office of the state commission giving that authority. And, further, there is a little fact that may not have attracted your attention. Week before last, the National Association of Railway Commissioners, composed of all the commissions in the United States, including the Interstate Commerce Commission, unanimously elected me their president; and before the conclusion of that national meeting, they unanimously passed a resolution endorsing my work in regard to the advanced rate case. Have you seen that in any of your Associated Press dispatches?

My time is just about up, but I want to tell you about the Chicago Board of Trade; I must say a word about it. The president of the Chicago Board of Trade led us to believe they were going to help us in this grain fight. Later, the fact developed that the Chicago Board of Trade doesn't care one iota what advance is made on your grain. They are not the people who pay the bill; it is you folk who pay it. At first, we thought the Chicago Board of Trade was going to stay by us and help us in the case, because it affected the grain traffic in general—a broad-minded position to take. But it was discovered by their traffic manager, a former employe of the Illinois Central Roalroad, that there was a slight preference of one cent a hundred pounds on traffic to the east that did not apply to shipments from other grain centers, and because of that slight preference it became the controlling factor, compelling the Chicago Board of Trade to say, through its president, that because of the division in sentiment among their directors, they had decided not to take part in the case.

If that case is going to be presented, you men will have to stand behind it and fight it through. I have asked the grain men to help. I think the Meat Producers' Association ought to help. We need from $5,000 to $10,000 to employ a corps of accountants and experts to do nothing else but work on these general advances that affect the producers and consumers of the middle west.

I hold in my hands a book filled with figures. Every one of them represents a reduction that we have secured in our rates in the general revision of interstate freight rates. I had a mass of stuff here that I wanted to tell you about. I wanted to show you how Mr. McPherson, who purports to represent the Johns Hopkins University, is sending out literature to all parts of the country, free of charge, creating sentiment on the side of the railroads. Here is a very finely written book. In the back of it is the poison. He shows that the return the railroads are receiving is around 5 per cent, and the return the farmers are receiving is around 9 per cent. He says that the farmers are able to pay all of their labor cost, taxes, and all of their maintenance, repairs, etc., and then have enough left to equal 9 per cent on their capital of $30,000,000,000. It seemed to me that was a rather remarkable situation, and I went to checking it through, and I am not going outside of this sheet of paper. On that same sheet of paper, I will impeach his own figures.

How did that happen? Just this way. The railroads report the wages they pay out, from the president down to the section hand. If there is any farmer in this room who is running his own farm, and reports the wages paid the boss of the job on his farm, I would like to have him stand up. That is the situation. I apply that $607 average of the railroad labor to the number of men engaged in farm labor, and I get a sum that is greater than the total value of all the products of the farms of the United States put together, and you wouldn't have a cent to pay on $30,000,000,000; it exceeds it by $900,000,000.

That is the kind of dope that is going out over this country, poisoning the minds of the readers—business men and bankers and manufacturers and clerks in stores. It is an outrage.

Here is a book. I was going to read the introduction. This fellow wrote some articles for Hampton's Magazine—Charles Edward Russell—and before they were in print, they had been read by railroad officials. Representatives went to the publishers, protesting against the printing of those articles, when the owner of the magazine didn't believe there was a soul in the world knew anything about the articles except his own employes. They challenged the railroad men to name where there were any mistakes, and offered to leave those out of the article. There were only one or two on insignificant matters. The railroads got even with Hampton's; they broke the firm.

There is one figure I want to leave with you. I don't know whether the western railroads are entitled to more revenue or not; it is quite possible they are, and that some rates ought to be advanced. It may be your grain rates ought to be advanced; I have not investigated the facts. It may be that there should be a general raise in western freight rates. All I maintain is that you are a bunch of fools if you are not on hand presenting your side of the story. I do want to tell you what happened in the eastern case. The evidence in that case is summarized on these exhibits I have before me, and I don't ask you to take my word for it.

Here is the exhibit introduced by the railroads themselves—a combined statement showing all the railroads operating between the Mississippi river and the Atlantic coast, in official classification territory—all of the systems partaking in the case; and it shows as a consolidated figure that for the year 1913 they were able to pay all of their operating expenses, taxes, interest on bonds and debts, and had enough left over to make 8 per cent on all their capital stock outstanding in the hands of the public, water and all—New Haven, Wabash, Erie, and all the rest; and during the previous ten years, that averaged in round numbers from 7 to 9 per cent. If I was not justified in making some fight on that proposition, I want you to hold up your hands—anybody in this crowd that feels that way.

Men, I don't get to see you very often; I may not get to see you during the next few years; but, whatever happens, I want you to know that I am courageously and honestly trying to do what I think is right and just by all parties concerned.

I thank you.

General Discussion.

The President: In accordance with the motion passed just before adjournment, the chair appoints the following members of the committee to consider and prepare a form of card to be sent out: Will Drury, Early; Henry Brady, Perry; J. R. Doran, Beaver.

We will now take up again the general discussion of association matters. We wish to give just as many as possible an opportunity to disabuse their minds of anything that might be there in regard to the work of the association; and while we don't wish to call anybody down, we hope you will endeavor to confine your talks within the limits of five minutes.

Mr. Rittgers: I would suggest that the chair suggest something for discussion that he thinks is the most important to the association at the present time.

The President: Acting on that suggestion, I should say that there are two things, in my judgment, that are confronting the organization, which are of vital importance, and possibly of the greatest importance. One is the question of what you are going to do in regard to the future so far as renewing the membership pledges is concerned. I think the secretary stated that the pledges in some fifteen or more counties had expired, and of course in those counties, after the first of January, you have no membership.

The other is what you are going to do in regard to these propositions that Mr. Thorne has brought out, that are confronting us, in regard to railroad rate advances and kindred matters. While it is a fact that we may feel as an organization that none of these rate advances directly affect us, except the rate on grain, which, of course, is a direct advance on our products here at home, and while we understand the increase in the live stock rates, the increased rates on dressed meat and packing house products, do not come directly on Iowa products, we must bear in mind that these increases affect us indirectly, and in all probability if they are allowed to go into effect, the next move will be to make a general increase on the whole Mississippi valley.

If you men have criticisms to make in regard to the way this organization has been handled by its officers, I want you to be perfectly frank and free to tell it. If things are being done that should not be, or that can be improved upon, or changed in any way, tell us. Be as free to tell us that as you would to extol the work of the association.

Mr. Rittgers: You are all aware that the minimum weights have been increased on hogs and cattle. It is impossible now to get a car for hogs under 17,000, or 32,000 for cattle; yet I understand that east of the Mississippi river, the minimum is 15,000 on hogs and 22,000 on cattle. They claim they can get forty-foot cars if they want them. Why the discrimination against the Iowa shipper on minimum weight? I can't understand it, but it seems we haven't influence enough. The large per cent of the cattle that leave Chicago go through the packers' hands and are shipped to New York or other eastern points; and whether they have leverage enough with the railroads to hold that minimum weight down, I do not know, but they seem to have. Overloading stock cars, in my estimation, is the greatest cause of loss we have. If I load my cars light, and give plenty of room, my shrinkage is low; if I have to crowd the cars to get the minimum weight, it is heavy. I don't think the association can do anything with that, but it seems to me the Interstate Commerce Commission could eventually remedy that; whether it could be done through the state commission or our organization, I don't know. This raise went into effect the first of October. I have heard of some men that had been getting the old rate, but the railroads found it had been overlooked, and they sent one man a bill for $200, and they are going to collect it.

Joseph Thompson: In regard to the question of raising funds, we can see that we are in better shape than we have ever been, and it seems to me we should continue that plan of getting five-year pledges, which I believe was formed by the president and secretary. I would move that that be continued, and that we authorize the board of directors to deal with the matter as they see fit.

Motion duly seconded.

Mr. Swearingen: I think there is going to be a little opposition in working this the second time. Of course that will be discovered when they go out to canvass the field again. I have had a little complaint come to me within the last week from a fellow who was beginning to lay down on the proposition. He was one of the best men in our association, and perfectly able to give the money, but said he wouldn't come across again in the way he had been doing.

The President: We have never attempted to set the amount a man should give. Of course, we did aim to get $5 where it was possible, but we didn't tell a man that if he didn't give $5, he need not give anything. As a matter of fact, men gave all the way from $2 to $10. I think that is largely a matter for the solicitor to handle. It may be that some of the men who subscribed $5 five years ago, will desire to reduce the amount. On the contrary, I have had men say that if it was necessary, they were willing to double their subscription in order to keep up this organization for the next five years. So you will run up against both classes, without any doubt.

Mr. Rittgers: Does that leave the collection of these pledges and the soliciting in the hands of the board, or is every member a solicitor for this organization?

The President: There is nothing to prevent.

Mr. Rittgers: That was my idea this morning in advancing that card proposition. They say we are not doing anything, and therefore they don't want to pay.

Mr. Nichols: It seems to me that this plan for soliciting money is a good one. Of course, some people think they have an awful sum to pay if they give $2 or $5 a year, and they don't understand where they derive any benefit from it. As for myself, I think I have got back all I have ever paid. One time when I was in Chicago with two loads of cattle, I met Mr. Sykes when he was there to see about the water. I have been taking cattle to the Chicago yards ever since 1872, and if that water was not rotten, I don't ever want to see anything that is. But since that time, I have found the water at the yards in good condition, and our cattle would drink it.

Another thing: We used to pay beef prices to get a load of feeders from Omaha, but the last few years it has been three-fourths, just the same as they give us from Chicago. I think the association has done a big work for the farmers, and yet men will say: "There is no use in my belonging to the Meat Producers' Association; I never ship any cattle; I sell grain." It seems to me the two ought to go together.

Mr. Swearingen: We don't want to lose sight of the membership as well as this fee; we can't accomplish much of anything with only a hundred members.

The President: I know that Mr. Nichols is rather modest, but I want to tell you who he is and what he is doing. He is quite a heavy stockman and farmer up here in Marshall county, and when we made our canvass of that county, he came right across with a pledge for $50—$10 a year for five years; and he says that this organization doesn't owe him anything.

Mr. Finch: I think it would be a rather uphill proposition for any man to start out and solicit funds for this organization; but I have in mind a way that I think would work perfectly. Most every banker is interested in the cattle feeding business, and if we could get them to use their efforts in our behalf in all these counties, it would help wonderfully.

Will Drury: I wish to say that we haven't the bankers nor the stock buyers with us as a general proposition, for the reason that they don't care what the rate is; they will collect the price from the farmer. When we were looking up unpaid pledges, we found one bank that had twenty-five pledges that I think had not even been presented to the men. It is not a very nice job for the president, or any member of the association to go around and ask for payment of a pledge that is three or four years behind.

Mr. Thompson: We find that the bankers are sufficiently interested when things are not coming their way. The last ten days, every banker of Greene county has been down here trying to relieve us from the quarantine. Whenever you stop the movement of thirty or forty thousand dollars a week, it means something to the bankers.

Motion submitted and carried unanimously by rising vote.

Mr. Doran: In regard to securing the money that Mr. Thorne suggested for the employment of rate experts, etc., the only way to do that is by an appropriation from the state. Let's get it big enough so that our state can be adequately represented before the Interstate Commerce Commission. You want just as good talent as the railroads have, but it is not fair that you fellows should pay for getting all these good rates for the other people of Iowa.

Mr. Dawson: This matter is of too much importance to everybody in Iowa for any one organization to assume the cost of fighting the battle. The proper method, in my opinion, is that the money should come out of the general fund of the state of Iowa, and that all property should pay its share. Our taxes on farms in northwestern Iowa have been excessive; we feel that we are paying a great deal more in some cases than we should be. If we can get the succeeding legislature to correct the difficulties that we are laboring under now, and get the burden of taxation distributed equitably on all classes of property, then the state of Iowa can levy taxes sufficient to do all the things that are necessary without overburdening anybody. Having done that, they ought to make an appropriation sufficient for the Iowa railroad commission and the Commerce Counsel to do the work that they find necessary in order to protect our interests. It ought to be sufficient, whether it is $50,000, $100,000 or $200,000. The work is too great for any one organization to undertake, even one so zealous as ours. It is not the Corn Belt people's business alone; it is the business of the people of Iowa. They ought to pay it, and I believe they are willing to, if it is levied proportionately.

Mr. Olinger: I think the gentleman's remarks are timely and good, but this plan reminds me of a man who was taking his colt out to train him for a race when the race was on. This question of settling the rates is for immediate consideration and the coming legislature is none too soon to get a bill passed or this appropriation increased, and then take up the tax question afterwards. To get it before the house, I would move that the president be one member of a committee, and that he select the balance, as many as he sees fit, and those whom he thinks would have influence, to put this matter squarely before this legislature.

Mr. Finch: Here is Iowa, over on one side of the house, with a $4,000 man, and over on the other side are the railroad companies, with ten or twelve $25,000 men. Let us raise money enough so that Iowa will stand in the front.

Mr. Drury: I am ready to second the motion that we create this committee, with the exception that we add the secretary to it. He has been a first-class lobbyist since he has been secretary of the organization.

Mr. Rittgers: It seems as though, from Mr. Thorne's address, there is just one man who blocked that business. Now, I don't want to cast any reflections, but I am going to say right here that that is just what you might expect. If you have watched political conditions in the state of Iowa and in Dallas county for the last five years, you must expect that very thing. You men can say what you please about this organization pushing something, but you can't push anything when you have the newspapers against you and can't get a thing published to your interests. Why can't you get the newspapers? You don't advertise your business; that is one reason. You don't need to try to push anything in this legislature unless you can get power enough to overcome the adverse pressure upon the press. You have seen in the last two or three years how these things have gone, and the same proposition is right up against us today. Just as soon as you ask for an appropriation big enough to handle this business, they will raise a great, big roar, and say in the papers that you are trying to rob the state of Iowa to defend this Meat Producers' Association. Do you suppose you will get anything? I doubt it; not with the present man at the wheel. We will have to vote differently at another election before we will ever get anything different.

After some discussion with reference to the quarantine in Greene county, in connection with the outbreak in the state of the foot and mouth disease, which was participated in by Messrs. Thompson and Doran, a recess was taken at 5 p. m.

The President: The meeting will stand adjourned until the banquet, which is called for 6:30 p. m. At 10 o'clock in the morning we will assemble in this room and continue our program.

Folowing the banquet officers and directors from odd numbered districts were elected as follows:

Officers—S. M. Corrie, Ida Grove, President and Organizer; R. M. Gunn, Buckingham, Vice-President; H. C. Wallace, Des Moines, Secretary; Chas. Goodwin, Wall Lake, Treasurer; W. C. Strock, Des Moines, Claims Attorney.

Directors—First District, J. M. Brockway, of Letts; Third District, David Muir, of Hampton; Fifth District, Warren Nichols, of Marshalltown, Seventh District, W. B. Westcott, of Linden; Ninth District, T. L. Myers, of Guthrie Center; Eleventh District, W. N. Dawson, of Cherokee.

THURSDAY, DECEMBER 10

MORNING SESSION.

President Sykes presiding.

The President: Gentlemen, I first have the pleasure of introducing Professor J. M. Evvard, of the Agricultural College at Ames.

"THE IOWA SYSTEM OF SELF FEEDING SWINE."

(By John M. Evvard, Animal Husbandry Section, Iowa Experiment Station.)

There has been much discussion as regards the ability of swine to balance their own ration, when a variety of feeds is placed before them. Does the hog have sense sufficient to know what he wants to eat? Can a hog balance his own ration successfully from a physiological standpoint? Is the appetite of swine an indication of their physiological needs? These are live questions, and their correct solution should mean much to Iowa swine husbandry.

Did you ever stop to recollect that the hog took care of himself hundreds upon hundreds of years before man had anything especially to do with him; perhaps before man ever saw him? Would you not easily believe that during all this time he balanced his ration in an efficient manner? Judging from the typical highly selected domesticated hog which we have today, we would naturally believe that the foundation that the hogs built for themselves in those early primitive days, in the way of bodily structure, and so on, was well built.

Would it be impertinent to ask, what did the hog do before he was tamed and domesticated by the primate mammal of the wonderful genus Homo sapiens—otherwise known as man?

Of course, we will admit that since man has taken hold of the hog, that the hog has had comparatively little choice as regards development; he neither has chosen his own feeds nor his own mates. In recent times, however, we have come to appreciate that swine do well when allowed to choose their own feed, hence we have the development of the forage crop system, the hogging-down system, the Iowa system of self feeding, and so on.

Let us pause a moment and consider the self feeding or "cafeteria" idea. It is quite generally recognized that sucking pigs do better if they are allowed a creep in which to go and select some of their feeds. It is also well agreed that if pasture is available for these pigs, that they will thrive better than in the dry lot. With the sucking pigs, therefore, we see them choosing from these feeds: Mother's milk (fed at several different mammae); pasture (usually of different sorts); grain feeds within the creep (there may be shelled corn, middlings, tankage and others). Is it any wonder that pigs fed in this manner do well?

The forage crop system of summer swine production is most excellent because of one big reason, namely, that the hog has some opportunity to balance his own ration. If the pasture be alfalfa, or rape, or red clover, he can eat much or little of it, and in this way vary the proportion of "side-dish" protein which he eats along with the corn that is thrown over the fence to him. If both corn and high protein pasture are supplied at free will, then he has even a greater opportunity to make his ration efficient. Of course, when the pig runs out on forage, he can eat of the soil; this is of advantage, in that complex mineral substances are supplied thereby. Of all the systems of "swine production in the summer time," the forage crop system is the most economical under present existing commercial conditions.

"Hogging down corn" is nothing more nor less than a self feeding system, and a most natural one at that. If the hogs are allowed free access to rape in the corn field, with possibly alfalfa alongside, then the scheme becomes a "cafeteria" one, in that the hogs have a choice of several feeding stuffs. Corn is hogged down successfully in every corner of Iowa; as a self feeding scheme, hogging down is a great physiologic and economic success.

Hogs that follow cattle are universally believed to do exceptionally well. Why is this? Surely, one of the reasons is that the hog has some choice as to what he should eat, and he shows his preferences unmistakably; it is part of the self feeder scheme.

Many of you believe that swine know more about how much water they should drink than men do, hence you allow it at free will. You have faith in the hog's ability to balance his liquid ration. So, too, many of you supply salt at free will, thinking that this is the best way; and from experimental data we secured at Ames recently, it would seem that your thoughts are about right in this regard. Then, again, thousands of feeders place such condiments as these before swine: Limestone, cob charcoal, slack coal, wood ashes, and others, with the faith that pigs will mix these in with their daily diet in much more economical fashion than when these are mixed with the feeds and "doped out" as so much unwelcome hash. Truly, the hog does not like hash any more than does the average human layman.

Now it is a peculiar commentary upon the good judgment of feeders that they should have the utmost faith in the hog as regards his ability to choose some feeding materials, but yet should hesitate to trust him with grains, usually high priced, such as corn, oats, tankage, meat meal, oil meal and others.

Man himself is a self fed animal; this has been true since the average man's earliest recollection. You have made the "dairy lunch" or the "cafeteria" system of eating popular by your patronage simply because it was efficient in administering to your needs. You have believed soup to be an appetizer, and uniformly eat it at the beginning of a meal; science has shown that you are largely right in this. Disregarding expense, you prefer the a la carte method to table d'hote, because in the former you choose, and in the latter you do not. You do not relish hash even as a side dish ordinarily, hence why should you expect swine to relish it as the one and only dish.

You have watched your babies "lick" the butter off the bread; prefer sugar to most other carbohydrates; devour milk and eggs rather than pickles and olives; and eat crackers rather than "soggy bread." Why all this? There is a reason; these foods are all easily and highly digestible, and they furnish sustenance in an efficient form. From a physiological standpoint, they are of great merit, but ofttimes the economy of them may be a question, especially when war times cause excessive prices on such foods as sugar, and other.

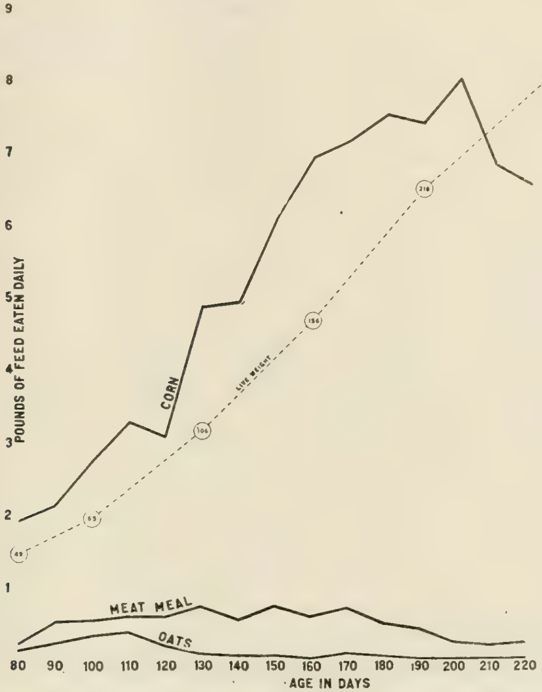
Surely appetite is governed by the state of the bodily needs. Appetite has been defined as the desire for food based upon the result of past experiences. There is much truth in this. Of course, we must remember that even though appetite is a reliable guide as regards bodily needs for feed, that the hog which manifests it is using as a basis, physiology and not economy. The hog is a physiologist, not an economist, therefore he chooses his feeds regardless of their monetary value.

How about the experimental research at the Iowa station, which has to do with the problem of self feeding? You will be interested to note some of our animal husbandry section results in the feeding of pigs from weaning time to marketable age.

Eight months and four days old pigs, fed in dry lot, weighed 316 pounds at Ames this fall. How were they fed? The following feeds were placed before these pigs shortly after they were weaned, and when they weighed about 45 pounds on the average: Shelled corn, meat meal (60 per cent protein), whole oats, linseed oil meal, maple wood charcoal, finely ground limestone (such as is spread upon the land to correct acidity of the soil), common rock salt, water. These pigs ran on an area which measured, outside of the enclosed shed space, approximately 20x80 feet. Surely this is a most excellent weight—316 pounds for pigs 248 days of age. This is especially true when we realize fully that they were fed entirely in the dry lot, and not on pasture.

Professor Dietrich worked for ten years at the University of Illinois, in the attempt to determine the optimum amount of different feed constituents which pigs should have every day after weaning until they went to market, at about eight months of age. In all that time, so far as I can learn from consulting his records at the University of Illinois, the biggest pigs he produced for the age weighed, when 251 days old, 308 pounds; and yet these Iowa pigs, which fed themselves, weighed eight pounds more per head in three days' less time than where they were hand fed according to the most approved methods of Professor Dietrich.

The manner in which pigs balance their ration is very interesting. This is clearly depicted in the three charts presented. By means of plotted curves, there is shown the number of pounds of each of the various feeds eaten by ten-day periods throughout a feeding period which extended until the pigs were approximately seven and one-half months of age.



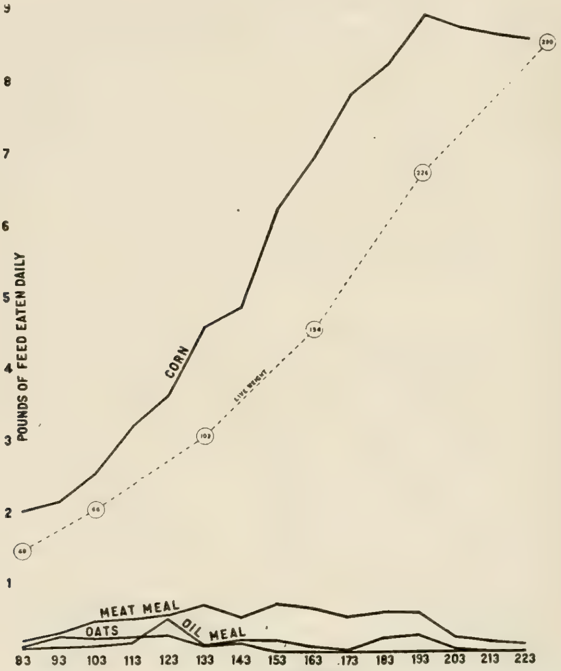
The way pigs balance their ration with corn, meat meal and oats.
All self-fed separately

On Chart 1 is given the corn, meat meal and oats eaten, together with the weights of pigs, from weaning time until they reached 271 pounds. Charcoal, limestone and salt were allowed in addition, together with water at free will, but these are not plotted.

It is intensely interesting to note that the corn consumption gradually increased until it reached a maximum of approximately eight pounds when the pigs were 205 days of age. Beyond this high point, or maximum of consumption, there was a gradual decline in the amount of feed eaten, showing clearly that the "pushed from birth" pigs had reached the "top of the hill' at the weight of about 225 pounds. The gains from this point on gradually became slower and slower.

Note that the meat meal consumption runs almost on a level until the 180th day, at which time it begins gradually to decline; actually, when these pigs reached the weight of about 300 pounds, being a little over eight months of age at that time, more than 99 per cent of their ration was corn.

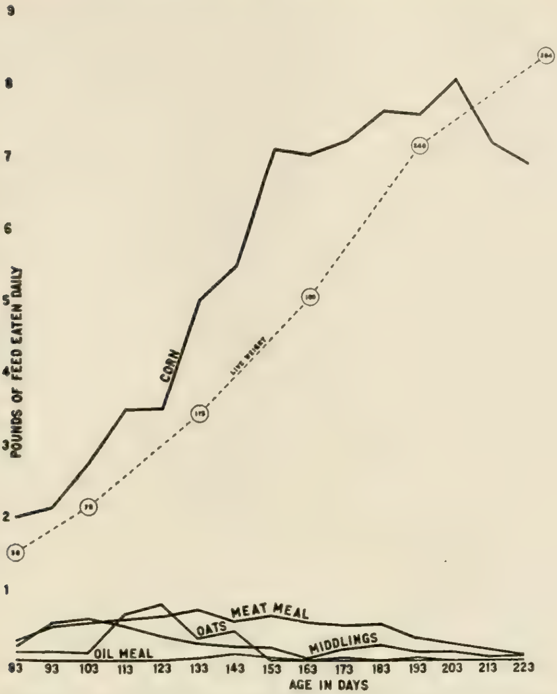
It is somewhat surprising that oats should be consumed in relatively increasing quantities up until the 110th day, and then gradually decline; nevertheless, this represents a normal condition of affairs as regards the consumption of oats by growing and fattening swine.



The way pigs balance their ration with corn, meat meal, oats and oil meal. All self-fed separately.

On Chart 2 another group of pigs received the same feeds as did the pigs shown in Chart 1, with the exception that oil meal is added. Practically the same condition of affairs is shown, excepting that the pigs have gained a little faster and that the addition of oil meal has inhibited the consumption of oats somewhat and decreased the appetite for meat meal to some extent.

This Chart 2 records the quantities of feed eaten by the record bunch of pigs which have been previously discussed, and that weighed 316 pounds when 248 days old. You may be quite interested to know that one of the pigs in this group weighed 405 pounds when he was 247 days of age, thus indicating great opportunity for development under such a system of feeding.



The way pigs balance their ration when self-fed corn, meat meal, oats, oil meal and wheat middlings. All self-fed separately.

On Chart 3 we show how still another group was fed; they received five standard feeds in conjunction with charcoal, wood ashes and salt; or corn, meat meal, oats, oil meal and wheat middlings. This group differed from the first group shown (see Chart 1), in that oil meal and middlings were added, and from the second group (see Chart 2), in that wheat middlings was supplied in addition.

It is quite interesting to note that up until about the 210th day of feeding, that this group was in the lead as far as gains are concerned. The middlings, however, seemed to have a specific effect, in that they caused these pigs to become a little overfat in the early part of the feeding period, this tending to inhibit gains after the pigs reached the weight of 250 pounds or thereabouts. One disadvantage in making the pigs overfat early in the game is that they do not gain well when they get bigger and heavier. However, this would seem to indicate the time honored practice of farmers who allow middlings to their young pigs only, is of merit, in that it gives the pigs a good early start. Perhaps the middlings should have been removed early to avoid this specific effect on fattening.

The records of the different groups show very clearly that the pig's appetite is variable; early in the feeding game, when he is young and growing at a rapid rate, he eats as much as 20 pounds out of every 100 in the form of protein supplement, such as tankage and oil meal, although the proportion of corn naturally increases until, when at the age of about eight to nine months, the pigs weighing better than 30 pounds, the ration is 98 to better than 99 per cent corn.

These three groups of pigs which have been fed according to the Iowa System of self feeding swine, show quite clearly the possibility of this method of feeding in the dry lot. Of course the recorded figures of these groups are given to you to awaken and arouse you to the fact that the appetites of pigs should be catered to if the greatest gains are to be secured. Of course the economy of gains is an important consideration, but nevertheless when we understand clearly that the appetite is a guide as regards the physiologic needs of pigs, then we will have a basis upon which to build more economic gains.

A comparison of these three dry lot groups with pigs self fed corn and salt upon most excellent alfalfa pasture is typically suggestive of the great possibilities which lie in the judicious and economic use of forages for swine. These forage fed pigs were given all of the corn they could possibly eat, night and day, together with salt at free will on luxuriantly green alfalfa pasture until November 24th; when, after a period of 140 days of feeding, they were placed in a dry lot (the forage being gone) and fed corn in one self feeder, meat meal in another, with salt continued as before.

The entire record of the "free will" dry fed pigs and the "cafeteria" pasture fed pigs during the 162 days of feeding is presented:

THE "IOWA SYSTEM OF SELF FEEDING" IN DRY LOT, COMPARED TO PASTURE.

Growing and fattening pigs of 45 pounds, from weaning to market; July 7 to December 16, 1914—162 days of "cafeteria fed" feeding.

	Shelled corn, meat meal, oats, charcoal, limestone, salt	Shelled corn, meat meal, oats, oil meal, charcoal, limestone, salt.	Shelled corn, meat meal, oats, oil meal, midlings, charcoal, limestone, salt.	Shelled corn, meal meal,* salt, alfalfa pasture.
Average final weight	288.6	299.3	289.32	288.2
Total daily feed eaten	6.01	6.55	6.32	5.96
Feed eaten for 100 pounds of gain—				
Shelled corn	361.91	379.62	372.40	391.5
Meat meal	30.55	25.65	27.57	
Oats	6.38	5.17	2.53	4.81
Oil meal		6.21	1.15	
Middlings			14.54	
Charcoal	.07	.12	.10	
Limestone	.04	.20	.14	
Salt	.11	.14	.13	.37
Alfalfa pasture				.0101†
Total	399.06	417.12	418.55	396.69‡
Cost of 100 pounds gain—				
Corn, 40 cents	$ 3.41	$ 3.50	$ 3.61	$ 3.03
Corn, 50 cents	4.07	4.19	4.28	3.73
Corn, 60 cents	4.73	4.88	4.95	4.42
Return for a bushel of corn, $6.00 hogs	.788	.757	.749	.816

*Last twenty-two days of 162-day period, finished in dry lot; pasture gone. †Fraction of an acre. ‡Plus pasture, .0101 acre.

Prices of Feeds.—Corn, 40, 50 and 60 cents; whole oats, 30, 38 and 45 cents; meat meal, $2.50; oil meal, old process, $1.50; wheat middlings, $1.45; charcoal, $3.00; limestone, 60 cents; salt, $1.00 per cwt.; and alfalfa pasture, $10.75 an acre.

Peculiarly enough, the "dry lot fed" pigs to a group outgained the "alfalfa ones," but this may be more apparent than real, inasmuch as the dry lot pigs did not begin to outgain the pasture pigs until the feeding period was well along. This fall (1914), the heavy rains of September, and the cold, damp weather in October, gave the dry lot pigs at the barn some advantage, but this is nearly always an expected advantage of dry lot feeding, that is, better, more controlled conditions overhead and under foot. The indications are that the pigs on alfalfa could have been removed a little sooner and put in the dry lot for their finishing touches; in other words, it might have been better to practice the time honored scheme of growing to a fattening age on forage and then finishing in the dry lot.

The important consideration is that after all is said and done, the forage fed pigs produced gains at the least cost. When corn costs 60 cents, the gains here cost $4.42 per 100 pounds, as compared to the cheapest gains produced in dry lots, namely, $4.73, this being where the pigs received corn, meat meal and oats in addition to the mineral feeds. Here is a difference of 31 cents in cost of gain in favor of the forage over the dry lot method. Of course the alfalfa was charged at only $10.75 an acre, which may not be enough under some local conditions. Where hay is exceptionally high in price, a higher cash value is attributed to said alfalfa. However, as much as $41.44 could have been paid for this alfalfa to the acre, and still produce gains at the same cost as the best dry lot, or $4.73 100 pounds. Really, this would mean, therefore, that pasture is superior to dry lot feeding. Under the conditions given, alfalfa would be worth for hog feeding purposes $41.44 an acre.

When it comes to the production of gains at the same cost, putting all of the profits upon the corn, hogs selling at $6, we have returns for a bushel ranging from 74.9 cents to 78.8 cents, in dry lot, as compared to the somewhat greater return of 81.6 cents on the forage of alfalfa.

In a comparison of hand versus self feeding methods, on alfalfa pasture, in the year of 1913, we had some very striking developments in favor of the self feeding scheme. After the forage was gone in late November, all of the pigs that had not reached a weight of 250 pounds were fed corn in one self feeder and meat meal in another. All of the pigs were started at weaning time in May, and were carried until they reached a weight of 250 pounds before the experiment was discontinued.

The results are given herewith:

Where hand feeding was practiced, it paid to supplement the alfalfa with meat meal or tankage, even though it cost $2.50 per 100 pounds, in that gains were more rapid; less feed was required for 100 pounds of gain, and less outlay was necessary from the dollar standpoint for 100 pounds of gain; then, too, the return for a bushel of corn was greater.

Where the ear corn and meat meal were hand fed, as compared to where the meat meal was self fed, there was no time saved as regards days taken to make a 250-pound hog, but feed was conserved, in that 13 pounds less was required for 100 pounds of gain. It happened that the costs of gains were identical with 60 cent corn. With 50 cent corn, however, there was 4 cents on 100 pounds gain advantage in favor of the

HAND VERSUS SELF FED PIGS ON ALFALFA.

Pigs, weaning to market, full fed.

	1S—Ear corn, hand fed.	1N—Ear corn plus 7.5 per cent meat meal, both hand fed.	8N—Ear corn, hand fed; meat meal in self feeder.	8S—Shelled corn plus meat meal, both self fed.
Number of days fed	229	206	206	180
Average daily gain	.95	1.06	1.07	1.22
Feed eaten daily—				
Corn, grain	3.91	3.82	3.62	4.10
Meat meal	.08*	.28	.39	.33
Total feed for 100 pounds gain	419.6	385.4	372.6	364.0
Cost of 100 pounds gain, corn at 60 cents	$ 4.57	$ 4.46	$ 4.46	$ 4.43
Return for bushel of corn, hogs at $6.00	.754	.796	.811	.839

*Some meat meal fed in dry lot following forage.

hand fed scheme. The return for a bushel of corn was greater where the self feeding scheme was used. Where shelled corn and meat meal were both self fed in separate feeders, the gains were most rapid of all, the feed consumption largest, the feed required for 100 pounds of gain less, and the cost per 100 pounds was decreased; then, too, the return for a bushel of corn was larger.

This point needs emphasis: The "free will" fed pigs, receiving both corn and meat meal on alfalfa (all three feeds self fed), finished for market at the weight of 250 pounds, forty-nine days ahead of the hand fed corn only lot. The range would have been even greater had not meat meal been fed to the "ear corn alone" lot after the forage season was over. It is quite a saving, if you can, and still get better results, to do away with forty-nine days of hog feeding. As compared to the two hand fed lots receiving both corn and meat meal, there was a saving of twenty-six days when the self feeder for all feeds was used, as compared to hand feeding. These indications are noteworthy:

1. Growing and fattening pigs that are full fed corn by hand on alfalfa need a protein supplement. (Recent developments of our feeding trials tend to show that pigs self fed corn on alfalfa pasture do not need as much supplement as where they are hand fed. This is contrary to our expectations, and we must await further evidence before making definite statements in regard to the truth or falsity of the indication.)
2. The self feeding of corn and meat meal in separate self feeders is practical and economical on alfalfa.
3. When corn is hand fed, there is a question (unless corn is kept before the pigs almost continually) as to whether or not meat meal is to be free will. Relative prices are important in the consideration.
4. Considerable labor was saved in self feeding; risk, interest, and responsibility were lessened by having hogs ready for market earlier.

To show the preference of hogs for corn, even though on pasture supplemented with a large number of feeds in separate feeders, figures are given which show the quick fattening of well grown shotes fed the "cafeteria way," on blue grass, in the summer of 1914: Seventeen 225-pound shotes on blue grass, for 68 days, with self feeders, there being allowed separately dry shelled corn, of which they ate per head daily 7.39 pounds; meat meal (carrying 60 per cent protein), .18 of a pound; whole oats, .07; wheat middlings, .04; linseed oil meal (old process), .10; charcoal, .003 (fine charcoal may be made from corn cobs); and rock salt, .003 of a pound. We could hardly have hand fed them to better advantage. They gained 1.75 pounds daily, which is quite good, and required for 100 pounds of gain, these feeds: Corn, 422 pounds; meat meal, 10.3 pounds; oats, 4.2 pounds; middlings, 2.2 pounds; oil meal, .7 of a pound; charcoal, .16 of a pound, and salt, .16 of a pound, or of total concentrates, 439.6 pounds. Charging the corn at 50 cents, meat meal at $2.50, oats at 38 cents, middlings at $1.45, charcoal at $3, salt at $1, and blue grass pasture at $6 an acre, the cost of the 100 pounds of gain is $4.22. Charging corn at 60 cents and oats at 45 cents, other prices the same, we have $4.98. With $6 hogs, the return for a bushel of corn, all profits placed on corn, was 72.7 cents.

A quick thirty-day finish was put on two groups of sixteen 265-pound hogs last winter (1913-1914), corn being fed in self feeders to the groups, the first of which was fed tankage as a slop and the latter self fed dry. The results are close. The figures based on Ames weights, follow:

	Hand fed supplement	Self fed supplement
Average daily gain	1.24	1.21
Corn eaten daily	5.91	5.61
Meat meal eaten daily	.31	.40
Feed eaten per 100 pounds of gain	503	498
Cost of 100 pounds of gain; corn at 60 cents, meat meal at $2.50	$ 5.74	$ 5.81

Practically, the results indicate close similarity. Of course, the allowance of meat meal was made, based on a large number of years of experience. It is hardly probable that the average layman could approximate as correct a proportion of meat meal in hand feeding so closely as was done in this case. In another experiment of this same character, but tried on a different set of hogs, the self fed hogs made the better showing, although the differences were small. One must not overlook the advantage of labor saved in the self feeding method.

In fattening old sows for market, our self feeder trials have been very satisfactory. For instance: Two groups of yearlings, weighing 241 pounds when started, one hand fed, the other self fed, on shelled corn, made gains of 2.30 and 2.64 pounds daily, respectively. The hand fed ones took 436 pounds of corn for each 100 pounds of gain, the self fed ones 417 pounds; the profit per hog in 58 days, corn costing 50 cents and hogs selling for $6, was, when hand fed, $2.77, and self fed, $3.42, a difference of 65 cents. Strikingly it is shown that for such mature hogs, the self feeder for short feeds is relatively very profitable. Other feeding records show that these old sows had more judgment as regards the amount of supplement they should have, if any, than their feeder, experienced and first class though he was.

Old sows, weighing from 300 to 500 pounds, just through suckling litters (if not too thin), make very economical gains on corn alone. This is in marked contrast to the heavy requirements of young pigs. for supplement.

A peculiar development has been manifested in our self feeder investigations. The indications are that less protein supplement is required along with corn when pigs are self fed than when they are hand fed. It seems that growing and fattening swine require a certain definite amount of protein, which must be supplied somehow, or the gains will be inhibited and the total consumption of feed decreased through a lack of appetite—this probably being the direct result of lack of protein, principally. Now we know that corn contains about 10 per cent of protein on the average, hence the pig which eats the most corn is getting the most protein. When pigs are self fed, they are enabled to eat more corn than when hand fed, hence they come nearer supplying the minimum of proteins necessary, and hence the reason why they do not suffer so much from protein starvation as do hand fed, corn alone, pigs. This is a very practical point in the economical production of pork, and it is one of which we have been unfamiliar until the recent developments in our "cafeteria" investigations brought it to light.

It is somewhat difficult in presenting a new proposition such as the "Iowa system of self feeding swine," to avoid giving a wrong impression. In order to guard against misconceptions which might arise from a study of the, let us trust not too enthusiastic, contents of this paper, there is appended some self feeder or "free will" don'ts, which may help to simplify the method:

1. Don't think that the hog likes hash (a mixture of feeds) any better than you do. He enjoys the "free will" choice method most heartily.
2. Don't use the self feeder for all classes of hogs.
3. Don't self feed if you want to grow your pigs along slowly.
4. Don't self feed if you do not want rapid gains.
5. Don't fail to provide sufficient self feeder trough space, because swine that stand around waiting for their turn to eat are wasting energy (feed) as compared to when lying down. Encourage the fattening hogs to lie down most of the time.
6. Don't expect the self feeder to save all the work.
7. Don't self feed pregnant sows excepting early in the breeding season, unless you mix bulky feeds—of which ground alfalfa is the best of all under corn belt conditions—with grain (a mixture of forty pounds of ground corn, fifty-six pounds of ground alfalfa, and four pounds of tankage should be well adapted to the self feeder scheme of carrying brood sows). Regulate the fatness of the gilts or sows by increasing or decreasing the proportion of corn in the mixture.

8. Don't think that because the self feeding method works out meritoriously in many circumstances with swine, that the same will be true of cattle, horses, sheep, poultry and goats.

9. Don't forget that the hog is a physiologist, not an economist; because of his physiological instincts, he will eat to suit himself; and if you feed him sugar, he eats it without respect to price. Corn at 60 cents a bushel and corn at 3 cents a bushel, so long as the quality is the same, makes little difference to the pig; it is all alike to him.

10. Don't always expect the hog to economically balance the ration, no matter what feeds you allow.

11. Don't fail to appreciate that "hogging down corn" is practiced by your fellow Iowa farmers because it pays, and do you not know that it is the natural self feeder method of harvesting the corn crop?

12. Don't you realize that when fattening hogs are lying down that they are making every ounce of grain count? They lie down more when self fed than when hand fed.

13. Don't expect ideal results if you self feed tankage or meat meal, if you limit the corn ration; when the pig gets hungry, it is to eat tankage or nothing, and he is likely to eat the tankage. What assurance has he that you are going to come back again with the feed that he likes most, namely, corn?

14. Don't weather the self feeder out in the rain, and the hail, and the snow (especially the latter), because such a method of procedure will inhibit consumption of feed. Put the feeder under warm shelter, and give the pigs the sort of surroundings you yourself like best.

15. Don't fail to realize that rats, chickens, birds (especially the cholera carrying pigeon), and mice enjoy the self feeder idea as much as the swine; guard your operations accordingly.

16. Don't neglect to self feed salt; this has worked admirably in our self feeding experience and observations. It is superior to the old "guess-at-it" method of mixing salt with the feed. Of course, one should not feed "brine" at free will, because that is not pure salt, and is liable to produce bad results. Start the pigs on salt slowly, and then leave it before them all the time. When swine are accustomed to salt, you can profitably leave it before them all of the time.

17. Don't feel you are compelled to trust the careless, unreliable human feeder always; if conditions warrant, you may use a self feeder and thus avoid the ill consequences resulting from unskilled men.

18. Don't lose interest in your hogs; visit them reguluarly and give them the attention they so richly deserve. Theoretically, all hogs not immunized are subject to cholera and other diseases, and although the self feeder may be of some assistance in the prevention of trouble, yet it will not absolve you from giving them the closest of attention.

19. Don't self feed unless you keep plenty of drinking water before the hogs always; self watering is part of the self feeding game.

20. Don't condemn the hogs because they root; ofttimes they root because you have not fed what the appetite demands, that is, what the pigs must have in order to develop normally. The same may be said

of the "chicken eating" habit; by using the "Iowa system of self feeding," where many feeds are allowed, all such worries are practically prevented.

21. Don't neglect to keep the self feeders full; see that the slides are working properly; this is very important.

22. Don't you know that self fed pigs are liable to eat most any hour of the night or day? It is well to have the feeders accessible all of the time, preferably under cover.

23. Don't forget the remedy for wasting ear corn in the mud. Shell the corn, place it in the self feeder which is arranged upon a small underfoot platform (this may be a part of the feeder); the feeder is best put under shelter to avoid this waste. The important thing to remember is that the self feeder is a means of keeping the ear corn out of the mud.

24. Don't rush the hog; the self feeder gives him plenty of time to eat without creating that impulse to hurry because the other hogs get all of the feed (as in the hand feeding system).

25. Don't you realize that the ordinary "cafeteria" or "dairy" style of meal serving is really a human expression of the self feeder idea?

26. Don't expect young growing pigs on dry, hard blue grass to do well when self fed on corn; either "green up" the grass or supply rape, alfalfa, skim-milk, meat meal, and so on.

27. Don't expect the self feeder to be a panacea for all swine feeding troubles and difficulties; simply remember that it is the natural way of full feeding.

28. Don't you appreciate now as never before that every efficient means of saving labor must be utilized to the greatest possible extent; the self feeder in the full feeding of swine may be of great assistance—a most efficient means of conserving labor.

29. Don't forget that pigs self fed, other things being equal, drink less water than when hand fed, even though they do eat more feed; the labor of pumping water for the hogs may be decreased a bit because of the self feeder.

30. Don't neglect the feeding of those dry lot fall pigs; they do most excellently when fed according to the "Iowa system of 'free will' feeding," allowing corn, tankage or meat meal, oil meal, oats, and salt. Why not try the scheme, and enjoy the results?

Volumes could be written about the self feeding system, and still much would remain unsaid. After all, it takes experience to determine the usefulness and practicability of any system of feeding; hence, let us await the judgment of the men in the field. The experienced ones so far are enthusiastic supporters of the principle as outlined in the scheme of the "Iowa system of self feeding swine."

Q. Do you find any waste to speak of in the self-feeding of tankage?

Professor Evvard: Very little. We like to place them on a concrete or wooden platform. Hogs which eat only two-tenths of a pound a day are not going to hang around the tankage very much. Our results take into consideration that waste. If it is wasted, it is wasted. Everything that the pig gets is charged to him, so that, even though there is a little waste, the advantages that he gains more than offset it.

In our experimental work, we start the tankage out the very first day, but in practice, I would not do that. I think I would take a week or so—just throw a little out in the trough and gradually get them accustomed to what they are to take.

Q. Any bad results from it?

Professor Evvard: No; we have never had any.

Q. In your plan for a self-feeder, you feed from one side?

Professor Evvard: We have four or five different plans. We will have a bulletin out in a couple of months, in which we will have feeders that feed from both sides and one side.

Q. I notice you figure the charcoal at three cents a pound. Where do you buy it?

Professor Evvard: From Wittig & Company, of Milwaukee, Wis., at $20 a ton, and pay the freight.

A member: We have a club, and a neighbor who moved to our community from Illinois, buys it and furnishes it, and it is costing us a cent and a half a pound. It has to be ordered in ton lots. It is a hardwood charcoal and exceptionally nice.

Professor Evvard: We charge three cents a pound to play safe. They eat so little of it, that it would not make any difference whether you paid two cents or ten cents a pound.

The President: I am going to change this program just a little, on account of the fact that Mr. Stryker wants to leave on an early train for Omaha; so at this time we will call upon A. F. Stryker, secretary of the Omaha Live Stock Exchange.

ADDRESS BY MR. A. F. STRYKER.

Mr. President and Gentlemen: Owing to the peculiar rate situation which obtains at present, and the immense amount of work caused by the hoof and mouth quarantine, I will be obliged to refer to notes. I have not had the time to prepare and commit an address, which should properly be the method pursued for a body of this kind. I assure you, I esteem it an honor to be asked to address the Corn Belt Meat Producers' Association, for the invitation implies a request on your part that we come and give you a partial account of our stewardship of your affairs on the public markets. This I do with particular pleasure, for the reason this is the first opportunity ever given a representative of the South Omaha

Live Stock Exchange to appear before you. Your organization has done more, I think, in the way of putting the feeding operations of the country on a firm and sound basis than any other.

"Time was" when the average feeder secured his feeding stock in a hit-or-miss manner, paying no particular attention to the grade of stock secured or the time it might take to mature same, to crop conditions, or, in fact, to any of those conditions surrounding his business which might have a beneficial or injurious effect upon his feeding operations for that particular year. These conditions are now decidedly changed, these changes brought about to a considerable extent by the information disseminated through the channels of your organization. Feeders today handle their business as carefully and economically, with as minute attention to detail, as that given by the manager of a department store to his business, or the president of a bank to the affairs of that financial institution.

Your organization, through its officers, has been wide-awake, safeguarding your interests in many ways. They have been tireless in their efforts with the railroads to secure equitable and just transportation conditions. Chief among the railroad cases instituted and pushed to a conclusion by your organization, was that which caused the lowering of live stock rates to Chicago from Iowa points. When the railroads attempted to eliminate the stock and sheep rate, your officers were tireless in their efforts to help the South Omaha exchange, which instituted this case. There is no question in my mind but that the testimony of your president, Mr. Sykes, and his able argument before the commission, had much to do with the final victory.

Your organization has called attention to some bad spots which have crept into the service at the public markets. It has been our desire to keep our market absolutely clean. A short time since, we discovered some bad practices on the part of one of our firms, and I can assure you the firm is not in business on our market at this time. We feel the interests of the members of your organization are our interests, that as your members prosper we prosper; that we are inter-dependent, and that those things which adversely affect your members are reflected onto us. We take it that we can best be worthy of our hire when, outside of those routine features of the average exchange, we keep a keen eye out for the welfare of our shippers. Among other items which we feel it incumbent upon us to watch carefully are the rates, rules and regulations promulgated by the common carriers. We feel it one of our duties to protest any changes in freight rates, rules or regulations, which adversely affect shippers to or from our market, asking the suspension of these proposed changes until the same can be revised by the Interstate Commerce Commission on interstate business, and by the several state railway commissions on intrastate business. We have complete confidence in the Interstate Commerce Commission and in its members, and believe them to be honorable gentlemen, keenly alive to the welfare of this country, and anxious to deal justice to all concerned.

At this point, I want to congratulate your members on their local railway commission, and upon its having for its chairman Clifford Thorne, one of the brightest, keenest, transportation men in the United States, I want also to congratulate you on having as a Commerce Counsel, Judge Henderson, whose argument in the contract valuation case was a clean, clear-cut, masterly presentation of the facts in the case. It was our privilege to help your officers and the state railway commission in the trial and argument of this case. We hope its outcome may be such as will prevent common carriers taking your live stock, transporting same interstate, and paying you but one-third of its valuation providing an accident befalls same. It seems to me no more unfair provision could be inserted in a contract or bill of lading than one of this character. It is our hope in the near future to be able to ask for several changes in live stock contracts. We expect to ask for the elimination of that feature of most of the contracts which says claims for damages must be filed before live stock is mixed. This is impossible at the public markets. When this case is filed, we hope for the assistance of your organization.

Many changes in packing house products, live stock and grain rates have recently been proposed by the carriers, most of these changes in the nature of advances. We have asked for the suspension of the tariffs carrying these proposed changes until the same can be revised by the Interstate Commerce Commission, and both the railroads and the shippers have an opportunity to be heard. It is not our position that all live stock rates are too high. We know of some rates that are too low; we know many others which in our opinion are too high. We do think, however, that all changes should be O. K.'d by the commission.

In conclusion, I want to say a little concerning the outbreak of the hoof and mouth disease, and the action of the Bureau of Animal Industry, Department of Agriculture, in the suppression of this disease. We understand, of course, that some of your members have been hard hit by this outbreak, and to them some of the regulations of the department may seem harsh, but we have implicit confidence in the honesty and ability of Doctor Melvin and his assistants, to successfully quell this outbreak, and in a manner that will be most beneficial to the entire live stock industry.

I thank you.

The President: I now take pleasure in introducing to you Professor R. K. Bliss, who is now the head of the extension department of agriculture, at Ames.

ADDRESS BY PROF. R. K. BLISS.

Mr. Chairman and Members of the Corn Belt Meat Producers' Association: I notice that the hour is getting late, and I wish to assure you that I am not going to detain you from the opportunity of visiting one of these cafeterias. You had a talk upon the cafeteria system of feeding pigs this morning, and I thought when Professor Evvard was speaking, what a fine thing it would be if every feeder throughout the state of Iowa could have had the opportunity which you men are having here this morning, to get this latest valuable information which comes direct from the experiment station, and that is the purpose of the extension department. It is the business of the extension department to get this material out to the people of the state in just as efficient and effective a manner as possible. It is the business of the extension department to take the experimental work of the Iowa experiment station and of the other experiment stations throughout the country, sift the unimportant from the important, condense and summarize it. It is also the business of the extension department to gather information from the experience of successful men throughout the farming regions, and sift and condense that, and combine it with the experiment station material, and present it to the people of the state. Most of you are familiar with that work, and I will dwell upon it but briefly this morning.

The extension department has been in operation for the last eight years, and during that time it has grown from the small department to one of the largest departments of our college; and last year, according to the report of the extension department, nearly 500,000 people were reached in one way or another by the department of agricultural extension. I can give you just a brief summary here. I have jotted down a few notes, so that I can save time for you this morning. Something like thirty-five one-week courses were held last year, which included the topics of farm crops, animal husbandry, and home economics. About seventeen two and three-day courses were held, which taught the same subjects. These were somewhat in the nature of institutes. Fifty-five one-week home economics courses were held, in addition to these thirty-five that I have mentioned, and eight two and three-day home conomics courses; and fourteen teachers' short courses were held throughout the state. Practically 26,000 people were reached, and in our institutes 29,000, and at other meetings something like 400,000 people.

There was a time when we had to go out and work up new lines of work, but at the present time it is difficult for us to get the right kind of men in order to meet the demand that comes from over the state. This demand has grown so that we have to work from one end of the year to the other. During the winter months, we have our short courses and farmers' institutes, which keep our entire force as busy as can be, and we are obliged to employ additional help in one way or another during the winter, in order to carry this work through, and then are unable to meet all the demands made upon us.

In the spring months you might think that the work would drop off, but our home economics workers are booked today for every available bit of their time during these spring months, for this short course work. Then we have calls for assistance at teachers' institutes, and we are planning now to conduct agricultural work in connection with the teachers' institutes, and in that way prepare the teachers to teach agriculture in the schools, or, at least, give them some encouragement and help along that line. Then we have our demonstration farms that we have to look after in the spring months, and our farm tours. I think that is a grand line of work. Here is a county where one man successfully grows alfalfa; another man is successful in feeding pigs; another is successful in feeding cattle; another in dairying. We go to that county and organize a farm tour of farmers, and visit these different farms. The man who has been successful in growing alfalfa explains to his neighbors and friends just how he grew it, and it is a demonstration that is of distinct educational value, and is lasting, and it has been done right in the community; there isn't any question about it. These farm tours take up a great deal of time during the spring months. Then there are the school picnics. The schools are at the present time making demands upon our department to come out and meet with them during the graduation—especially the rural schools. Then there are spraying demonstrations. Our horticultural men are booked solid during the entire spraying period for the spraying of fruit trees and vegetables.

During the summer we have our bulletin work, summarizing these data that I have already mentioned, attending school picnics and institutes, taking care of our demonstration farms, and snatching some time for vacation. Sometimes we don't get it, but it is a good thing to take some time off in the summer.

Then in the fall our fairs begin, and we have a tremendous demand—more than we can fill—for judges at fairs, along the line of judging live stock, farm crops, horticultural exhibits, and home economics exhibits. Colt shows make a great demand upon us, and we were unable to fill the demand last year. We went out of our way to fill a large number of these dates for colt shows. Then there are the institutes and short courses that begin again in the fall, and the preparation for the winter work. And we have some extra things to look after during the entire year. The boys' and girls' club work is growing, and should grow. Then there are the dairy test associations that have to be taken care of. I presume some of you are familiar with these; if you are not, there are some of these organizations up in the northeast part of the state that are going to make Iowa famous from the standpoint of dairy production, because they are applying strict business principles to their methods of dairying. Ten men give their entire time in this state to looking after the cows in these associations, and those men are paid by the ones who own the cows. That is a fine line of work for any community which is really in earnest and wants to go into the dairy business. We are organizing a co-operative egg association in connection with one of these test associations.

Then there are the special things that come up—the hog cholera control work, and foot and mouth disease, and the Hessian fly, and all these other things that are bobbing up continually; and the organization work that we keep at constantly from one end of the year to the other, believing thoroughly that if the problems of this state are to be successfully solved, they must be worked out by the people in the communities. We can furnish some assistance, but when it comes to the actual working out of the problem, it must be done by the people who live in the communities.

I have not mentioned one other line of work—the county agent work, which is growing in this state, and is destined to grow rapidly in the future. I want to point out briefly some of the plans for developing extension work in the future. The principal plans we have for development work will be along the line of the county agent and the correspondence course in agriculture for teachers; and I will speak of the correspondence course first. We are at the present time working upon a correspondence course in agriculture for rural teachers. The one way in which we will be able to get information into the hands of every boy and girl in this state is through the medium of our public schools. Our last legislature appreciated the fact when it passed a law requiring the teachers of Iowa to teach agriculture in the rural schools, beginning with September 1, 1915. But in order for teachers to teach agriculture in the rural schools, they must have some facts to present, and a method of presenting them; and we are at the present time working upon this correspondence course, and we are planning to place facts in the hands of the teacher, and at the same time place a method of teaching in her hands, so that when she gets the lesson that we send her, she will be able to teach it in turn to the pupils under her charge. Now, this question has been discussed for a long time, and some have assumed the position that it is impossible for a teacher to teach our boys and girls anything about farming. Let's get that idea out of our heads if we may. A teacher can not tell a child how to work a problem in arithmetic; the child has to work that problem for himself. What the teacher does is to encourage that child to work out the problem for himself; and, if we, through a correspondence course, can furnish this teacher with material which she, in turn, can turn over to the child, and encourage it to work these problems out for itself, we have rendered a great service to agriculture in this state. And when the teacher in your section goes to teaching agriculture in the schools, you want to get back of it and help it out. I have high hopes of what may be accomplished through the teaching of agriculture through our rural schools, if we will take that attitude toward it. Take this question of soil fertility: it is entirely possible to work out facts and lessons for rural teachers so that they can impress upon the pupils under their charge the tremendous importance of maintaining the fertility of the soil, and start them to thinking. This little information that they give these pupils may be the leaven which will finally leaven the whole lump, and inspire them to go forward and study deeper into these subjects. We feel that this course for teachers is essential, and that it will accomplish great results throughout the state if it can be given a thoroughly fair trial.

The other line of work is the county agent work. We have been talking about a greater Iowa, and the difficult thing when you go to talking about that is to really comprehend the greatness of the state. So I am going to divide the state of Iowa by 100—or by 99, to be more exact—and take one county in the state. We can understand the greatness of a county, I think, a little better than we can the greatness of the state. The average county raises 90,000 acres of corn, approximately; about half as much oats and wheat, and somewhere in the neighborhood of 20,000 brood sows, and something like 14,000 milk cows; and the live stock and the grain crop and the land, representing a capital of millions of dollars, constitute the wealth of the average county in the state. The average yield of corn in the state of Iowa today is about thirty-five bushels per acre, but there are men in every county raising forty-five, fifty-five or sixty bushels per acre. Perhaps some of the men present today have an average of sixty bushels per acre covering the last several years. Why is that difference? What is the reason for it? Is it the difference in the original fertility of that soil, or is it due to difference in methods of farming? We feel that it is more largely due to differences in the methods of farming, and if one man can raise sixty bushels of corn per acre, certainly the average of the county ought to be more than thirty-five.

Let me call your attention to some of our experiments along this line. During some years past, we have conducted farmers variety tests in connection with our county farms. At corn planting time we go out through the county and collect eighty or ninety samples of seed corn from different farmers—just the kind of corn that will be planted. We plant this in plots by hand, so as to get it exactly right—usually three different plots, in order to have our records exact. These experiments have been conducted for the last ten years at different places, and the summary of this work will show that the seed collected in this way, when taken to the county farm and planted side by side with the average, will produce an average of ten bushels per acre more than the average seed planted in that county. If that is true, that if we could replace all the seed in the county by seed taken from the one-tenth of the best farmers in that county, it would mean an increase in yield of from thirty-five to forty-five bushels an acre. It is entirely possible to increase this yield from thirty-five to forty-five bushels, and on up to fifty or sixty bushels.

Take the question of milk cows, with 14,000, and an average yield of butter-fat around 150 pounds per cow. If the boys in the country could just learn that a stool was made to sit on always, and not to pound cows with, they would increase that ten pounds per cow, and there you would have an increase of 140,000 pounds.

There is a tremendous opportunity in every county, and we believe the best way is to organize it and place someone in the county to take care of it. The county agent organizes a short course here, an institute there, and a farm tour in another place, and conducts demonstrations upon different farms throughout the county. He is the man in the county who gives special attention to the business of that county, and we are thoroughly committed to the purpose of developing this county idea throughout the state, and placing a county agent or a local representative of the college and extension department in these different counties. This man is on the ground, sees what needs to be done, plans the work, has his special problems bobbing up to confront him continually, and he calls upon us and we send out men who are specialists along the lines of the different problems, to help him in their solution.

Just a word, and I am through. We have been talking about a greater Iowa. This is a fine sentiment, and we need to get back of it and keep it going. But, after all, the future greatness of Iowa depends primarily upon the fertility of the soil. We have nothing else in the state except a few coal mines, and whether or not Iowa reaches the place that she ought to reach will depend primarily upon the methods we use in handling this soil, so as not only to maintain this fertility, but to make it more fertile and productive in the years that are to come. That is the great problem before the people of the state of Iowa, and I want to congratulate you men of the Corn Belt Meat Producers' Association, upon the fact that you are the ones who, in my opinion, are successfully solving this question of maintaining soil fertility. The practicable plan of maintaining the fertility of the soil is to market the unsalable and rough feeds of the farm through the medium of live stock, take care of the manure, and return it back to the farm. We cannot indefinitely maintain the fertility of the soil by a simple rotation of crops. Take the experience of the Ohio station, covering a period of eighteen years, in which they have followed rotations that included clover regularly. Some of these rotations are four years and some five. Covering a period of the last year (you can find this information in Bulletin No. 246 of the Ohio experiment station), they have found that where barnyard manure was applied to this land that was being rotated, in comparison with land that was being rotated but did not have any manure, the former has returned $2.73 a ton in increased yields upon the land, where the manure was taken right out to the field; and they have found that manure that was kept under cover and was not allowed to leach out, has returned increased yields of $3.73 per ton; and when the manure was treated (as it needs to be for the soils back there) with mineral elements, such as phosphorus and lime, the increased production due to the application of that manure has been very much larger than in the cases that I have already cited, running up as high as $5 per ton for the manure.

Now, when you take into consideration that the average 1,000-pound steer upon full feed produces manure at the rate of about seven or eight tons per year, you can see how important it is from the standpoint of maintaining the fertility of the soil, to take care of this manure carefully and return it back to the land. You men know that that is true. You can go through this state in any of the older regions, and wherever you find a man who is producing fifty and sixty bushels of corn per acre year after year, you find a man who is taking care of his land; and in nine cases out of ten you find a man who is marketing his surplus produce through the medium of live stock, and returning the manure to the farm. On the other hand, if his neighbor is raising twenty-five or thirty bushels per acre, you almost invariably find a man who is marketing his crops at the elevator. And so I want to congratulate you upon the business that you are in. The Corn Belt Meat Producers' Association, or the people of Iowa who are producing live stock, are creating a market for the rough, unsalable feed of their farms, and converting that feed into human food, and at the same time they are solving this question of soil fertility. I want to assure you, on the part of our extension department, that we emphasize, in and out of season, every member of the force, the necessity of maintaining the fertility of our soil. If we can be of service to any one of these different communities here represented, we stand willing and ready to give everything that we have in that service, and we hope that we can co-operate with you in some way to work out these problems that we have in the state.

AFTERNOON SESSION.

Vice-President Gunn in the chair.

The Chair: I am going to change the program just a little. Doctor J. I. Gibson is with us now, and as he is very busy at this time, we will hear from him on the foot and mouth disease.

FOOT AND MOUTH DISEASE.

BY DR. J. I. GIBSON, DES MOINES.

Mr. Chairman and Gentlemen: I don't suppose it is necessary for me to talk particularly about the disease. The time is too short to tell you all about the foot and mouth disease, and I couldn't tell all if I tried. It is an eruptive blood disease, causing high fever in the early stages, rapid emaciation, then vesicles form, and rupture forming ulcers. When the eruption takes place, the fever drops, the same as in measles and all other eruptive diseases that you know about in your own families. There is a difference in the infective agent connected with the spread of each disease. The infections differ in virulence and in carrying possibilities. It is enough for me to say that foot and mouth disease infection is as easily carried as any known disease of man or beast, because it is readily carried on the clothing and the shoes of the attendant of animals, and by various other carriers.

Now I will take up just for a short time this outbreak. It was first located in Michigan, adjacent to the town of Niles. In this town is a tannery that does quite an extensive business, and it is supposed that this outbreak came from one of two or three causes. One is hides from foreign countries. While we have always maintained that the United States was free from foot and mouth disease, and have always stamped it out when it appeared in this country, yet we have some domain that is always infected—the Philippine islands, for instance. One report is that water buffalo hides from the Philippine islands produced this disease. Another is that tanning materials from Japan and the Argentine Republic produced it. These materials were put up in a peculiarly woven, heavy, mat-like sack. These sacks made good door-mats, and some of them were carried home from the tanneries; and I believe the disease was first seen on those premises.

You have heard it charged that there was unnecessary delay in connection with handling this outbreak in the first four counties—first in the two counties in Michigan, and then they found it had spread into two counties in Indiana which adjoined. There was some delay. The government first sent their men there and took virus from the patients and sent it to Washington, and they made inoculations and failed to produce the disease on inoculation. For some reason or other the virus became attenuated—weakened—in transit, as is often the case. I might further state that the first cases in Michigan were very mild cases. Evidently, the virus that started this outbreak in Michigan, was almost inert, it had almost lost its virulence and power of producing this disease; therefore, the first herds were so mildly affected that it was misleading. After it spread to a few herds it soon regained its virulence, and was producing a type of the disease the most pronounced ever seen by our men in the field. There was a pure-bred Red Polled herd—a nice, well-kept herd—in Indiana, that even had the large blisters on the muzzle up between the nostrils, where they say it is very rarely seen; and Doctor Eichorn drew from one blister over three drams of the deadly fluid that produces the disease.

Now, in these four counties, they didn't have as much live stock in a county as we have in a township in Iowa. Iowa has no equal in all lines of agriculture, and especially in live stock lines; so that, while Iowa is at the forefront in all these matters, these outbreaks of the disease that strike Iowa are more serious than when they strike any other territory. There was little stock business between these four counties and Chicago. In looking for shipments, they found only one shipment of hogs from Indiana to Chicago, and the man who shipped them, after he had learned more about foot and mouth disease in the community, said he believed some of the hogs that he shipped to Chicago had foot and mouth disease. So that is how we believe it reached Chicago.

There was a time (I can't give you the exact date) when the authorities of the government were pleading with the interests in Chicago and the authorities of Illinois to close the Chicago stockyards and clean and disinfect them, before they were sure that it was there, and before they were sure that the stockyards business was going to spread it in other states. The government was hotly opposed in this proposition, and it went on for some time, until finally they quarantined the state of Illinois, and the stockyards company then had to clean up and disinfect. If they had quarantined Chicago when the government requested them to do it, so far as we have traced the dates now on our outbreak, we would have had no foot and mouth disease in Iowa. I can't give you the number of states—infected—it was about twenty—that received this infection from the Chicago yards. We received twenty-four shipments during the critical time. Before we knew that we had been in danger, positively, I went through my files in the office and gathered out every certificate indicating the shipment of cattle from the Chicago yards into the state of Iowa, and sent my men out to place them in quarantine, for foot and mouth disease. We had this work practically covered the first time before the government told us that we had received infection, doubtless, from Chicago. At that time the outbreak was bad in other parts of the country, and the government was very short of men, and we had been handicapped in accomplishing things as fast as we would have liked to, although I am glad to say to you that I think we have it under control in Iowa. We have had the disease show up in only six counties; those are Iowa, Johnson, Jones, Jackson, Clinton, and Cedar.

As you know, on November 6th, the state of Iowa was first placed in strict quarantine by the United States authorities. Later, effective on the 30th of November, we had seventy-eight counties released only as to an open market for slaughtering fat stock. Before the government would make that release, we had to agree o place thirteen counties as a health border around the six counties in which the disease existed. Those counties I will always remember, I think, because we have had an awful roar from them. They couldn't understand why they should be quarantined when they didn't have the disease. But I am telling you that I have had to do what the federal authorities asked me to do, or else they would slap it on Iowa and say, "Take care of yourself." So we were moving every way and doing the best we could to get the release as fast as possible. Only yesterday we received Amendment No. 7 from Washington, which permits feeding and breeding stock to come from clean states into certain yards, and go back again into clean territory. That will relieve one big loss in Iowa. The Sioux City yards had a large feeder business, and they were still held out of about half of it; so they were delighted yesterday when they got news that that was relieved. They can now take in feeders from the West into certain yards set apart for that business; and can send them back again through the states that are quarantined against us for all other purposes—Nebraska and South Dakota. These two states together take about half of the Sioux City feeder business.

The states that are in bad condition now are Illinois, Ohio, Indiana, Pennsylvania, New York and Kentucky. I have some statistics that I will give you, so you will know what it has amounted to up to date. Of course, you all know what it has amounted to in your individual cases, and the part of it that we always regret is the individual loss.

There is one thing wrong about quarantine procedure. All over this country, all quarantine measures and all restrictions of that kind are supposed to be placed with a view to the greatest good to the greatest number. There are men who have been fixed under this quarantine so they had no market for their hogs, and the hogs were ready, and the cholera had even broken out in their breeding herds on their farms, and they had no escape. The man who loses his hogs under these conditions ought to be entitled to an appraisal, the same as the man on whose premises we find the disease, and we appraise and kill his stock.

As I said before, the disease has been found in the six counties that I named. The total number of diseased herds has been twenty-six, and those come down to an individual animal in one or two instances, that was on the premises with the herd where the disease developed. The total appraisals to date amount to $53,824.62; estimated total cost of burial—that is, the digging of the trenches and the filling, $1,072.75. Added to that, of course, is the price of disinfectants and the work of disinfecting farms, and the lime. As high as thirty barrels of lime have been used for one grave. Those trenches are dug eight feet wide and eight feet deep, and a foot in length for each bovine that is to be buried; and we allow that the hogs and sheep, if there be any, will fit into the crevices.

At the earliest possible moment, I ran over into Indiana, to see the disease, so that I would know what it looked like, and to see the measures adopted by the government while the work was going on. I did not suppose I would really need the information, but I was not there much too soon. I had not much more than gotten home when I found we were in trouble.

The total number of diseased cattle in Iowa to date is 693; total number of hogs, 936; total number of sheep, 11. We have no goats; this is not much of a country for billygoats. In Cedar county there were seven herds, in Jackson four, in Jones five, in Clinton one, in Iowa eight. In some instances we could not get the people to realize how serious foot and mouth disease was, and how difficult to control, until it had spread to some other farms. Most of the exposures took place before we had established any quarantine, and, in fact, before we knew that we had any foot and mouth disease in the state. In one instance a man took eleven head of cattle home just a few days before the quarantine was established on the diseased herd. This was in Iowa county. That man never admitted that he took cattle out of that pasture until his cattle at home were all diseased. Wouldn't you have thought that any good citizen, when he knew that the herd was diseased from which he took the eleven head, would have said, in fairness to us, the government authorities, and your own authorities: "Come over and quarantine me; I am afraid I have got it."? When his cattle were all diseased, he couldn't very well stand out against it any longer. In one instance the hogs got through the fence; and there has not been a single direct exposure to any one of these outbreaks but produced the disease. At Oxford Junction it jumped five miles, and we didn't know how. The man to whose place it had jumped was a very reputable citizen, and he said he hadn't been away from the farm. We found out later that they bought a puppy from the farm that had the disease, and his boy went down and got it, and that is the only connection we have between the two farms. Either the boy or the puppy carried enough infection to produce the disease.

At Tipton they killed 149 cattle and 389 hogs; total appraisals on those three farms, $17,064.72. That is where we struck Matthews & Sons' two carloads of steers weighing 1,650 pounds, fitted for the Royal and the International; and in another field we struck forty-nine head of steers that weighed between 1,200 and 1,300 pounds, all on the Matthews farm. We first found his hogs infected. They were treated with Great Western serum No. 44 and virus No. 41, with no other known exposures. We killed his hogs. These cattle were on different parts of the farm; his wife was taking care of part of them. We recommended all precautions that we could, but we had reason to believe that the young man Matthews did not deal with this disease as he should; and the first thing we knew, it showed up definitely in the forty-nine head of lighter steers, and they and the show steers were watered at the two ends of the trough which extended under the fence. His attorney wrote that there had been no exposure to the show cattle, and I simply answered him that there was only one more effective exposure than the watering trough, and that would be direct inoculation.

There were two farms there out of seven on which the Great Western serum was used, developed the disease up to date.

We had this modification in the quarantine: First, 78 counties were permitted to ship to outside markets November 30th. On December 7th we got another modification that the thirteen border counties around the disease were permitted to ship to market on special permit issued by a veterinarian who was a joint employe of the state and the bureau. The state pays $5 a day, and the bureau $5 a month for these men, and that is working fairly well now, although these men cannot reach the inspections as fast as they are being called for. Yesterday morning we wired for eleven additional men to add to that force, but we have not yet got any confirmation from Washington. Their man wired in the proposal, and I followed it this morning with a telegram saying that the necessity for these men was very urgent at this time. I have not had an answer yet. The next modification we are looking for (I have a communication from the bureau today that hints at it) will be the entire release for all purposes of the seventy-eight counties), the privilege of the other thirteen to ship without examination, and the examination work to be closed down to the six counties in which the disease has existed. I might say that this week will see not only all the known diseased herds up to this date killed and under the ground, but the disinfection of the premises.

I think this is the fifth outbreak in this country. Our government has followed the stamping-out process. It looks sometimes as if this outbreak had gotten too large; it is going to cost so much money; but I am satisfied yet that if they can get an early eradication of the disease, it will be worth untold millions to the United States to still have our stock above foot and mouth suspicion.

It has been difficult to get the railroad companies and their agents, the express companies, the live stock dealers and the people to all understand the different restrictions put upon them. We have had some trouble, but there have been very few shipments that have been made in violation of quarantine. I heard of one today that went to Keithsburg, Ill. That is a direct violation, because at this date there is nothing leaves Iowa for any purpose except for immediate slaughter and they are not permitted to go east of Chicago alive. Horses, of course, are not included in this quarantine; poultry is not included.

If this disease had come in the summer time, when the shotes were growing and the steers out on the grass, and practically nothing ready for market, it would not have caused any hardship; but it came at the regular time for our shipments; and how did these conditions find us? They found us the greatest producing territory of live stock on earth, absolutely dependent, you might say no market of our own. We furnish our own killing plants—a dozen or more in Iowa, with a goodly number of hogs and a few cattle; we furnish a lot of stock for slaughter in St. Paul, in Omaha, in St. Joseph, in Kansas City, and in St. Louis; and after doing all that we furnish forty per cent of the entire business of the Chicago yards. Now, it does look to me as if we are big enough to have our own market, and you meat producers are here to see what you can do with your resolutions and your influence to better your conditions in Iowa. Suppose you get busy and create somewhere in Iowa a market and a slaughtering point that there is no Christmas beef too heavy or too good to go to, and no hogs too heavy to go to. There isn't any reason why we should have to pay freight and lose shrinkage and pay freight back on our cured meats from Chicago and these other places. You have slept on your rights in this regard while the railroads have been busy training the people where to ship their stock. I found out the other day that twenty miles from Des Moines they ship to St. Louis, because they have the Wabash road running there. There ought to be a market built in Iowa that will handle a situation of this kind.

Now, of course, whether I caused these losses or not, I sure get the blame more than anybody else. I have worked day and night on this proposition since it came on, and you may think it sounds foolish, but I have had a paralyzed hand and arm from holding a constant position at the telephone; my elbow got bruised so that I couldn't lean on it any more, and my fingers on my left hand would be numb all night long. I did more telephoning than I ever expected to do in all my life, and long distance telephoning is hard work.

Out of all our troubles and with the general disinfection of stockyards and stock cars, and the present requirement that every car must be disinfected after every shipment, I believe you are paving the way for enough less cholera in Iowa to pay you for all the trouble you have been to. I want to see it put into law that no railroad company can bring a dirty car into Iowa, or sidetrack a dirty car with all kinds of infection in it. If we can't run both things at once, suppose we ease up on the cutting of freight rates and demand sanitary service from the railroads. The stock cars ought to go out for every load so clean that the man who has the best known Short-horn bull or the best boar in Iowa could put it in that car safely. It has even come to a point that the man who ships his boars by express is in danger, because the express cars are not cleaned and disinfected as they should be. And the man who has a number of cattle to ship can't get a car that ventilates properly and gives his cattle a fair shipment in the warmer part of the year, because he doesn't dare load them in a stock car. He has to jam them into a box-car. That is one serious problem with the man who owns good stock. I hope they will put into law this year something like the proclamation for disinfection of cars that we sent out. It may be improved, but it covered the point in a very few words, that every car in Iowa had to be disinfected, and that no company should haul a car into the state of Iowa that was not cleaned and disinfected.

Let me tell you about some of our good luck. The government is tracing every car and every secondary exposure. There were two cars that hauled diseased cattle from Chicago to Fulton, Ill. One of these cars came into Iowa twice after carrying this load to Fulton, and went out again, and was caught in Wisconsin with other cars, and disinfected there two or three weeks after its infection. It came into Iowa empty both times, and carried stock out. If it had brought anything in, it would undoubtedly have given us a new focus of disease everywhere it unloaded. Another car came from Fulton, Ill., to Belle Plaine, Iowa; from Belle Plaine to

Harlan, and from Harlan back to Boone, and was disinfected with other cars in Boone; but there hadn't been a thing in it; it was hauled empty all the time, and good luck for us that it was.

You saw by the paper this morning that they are trying to make a new mixture down at Washington, and I can tell you right now it won't mix. You can't mix politics and sanitation, and you can't compromise with an infection like foot and mouth disease. If you slip one cog, you will go right out and find that it has spread on you. I even proposed to the governor that he call out the state militia and stand them as pickets on the roads in the neighborhoods of these outbreaks, when it was getting away from us; that was before we knew of all the exposures. We found out afterwards that we were not so much to blame as we thought we were; that the exposure took place before we knew it. There has not been a case where a herd of cattle or hogs came together at the line fence, but all had the disease. I had just as soon undertake to control Bubonic plague or Asiatic cholera, as to successfully control foot and mouth disease; and you have a better show to control disease with the human family than we have with the animals. To show you how strict we have been, the moment we found the disease, we served a written quarantine notice upon the owner, upon his wife, upon every child in the house, upon his hired help, and absolutely forbade everyone to leave the premises. Not a child has gone to school from a farm where this disease has existed. We have forbidden all persons to go onto those premises. In one case, an auctioneer went on a farm to see the disease. My assistant followed him to his home, and socked him and all of his family into quarantine immediately. I think I am honest in this; I think I am doing my best. I know I am causing hardship, but it is better to have this stamped out and have Iowa clean again at the earliest possible moment. We are going to do this right to the best of our ability. Who in all this state stood by me the best President Pearson, at Ames. Why? He knows foot and mouth disease. He was commissioner of agriculture in New York when they had it there to deal with. I told him about the troubles we had. A banker came in, a nice young man, who said that this quarantine stopped $200,000 coming across his way, and the condition of your banks is always an index of the condition of your country. President Pearson said: "That is too bad, but you tend to your knitting," and he is the one man, knowing what I was dealing with better than any other man in Iowa, that has told me to stand firm and to do what was necessary to control this outbreak at the earliest possible moment.

I don't know for sure when the next release will come. I will outline what I think will come soon: An entire release of the seventy-eight counties; a release of the thirteen that have been so wounded to go to market without inspection, and the inspection work gathered into the six counties, and the fifteen-mile radius reduced.

Mitchell and Greene counties are in a class by themselves. We have the serum exposure there. We have the No. 44 serum and the No. 41 virus used in Greene county and Mitchell county, the same as we believe produced this outbreak in Cedar county. I presume the government man will get through with Mitchell county today, and I believe the proper time has elapsed, and that Mitchell will be released; and I hope by this time next week, Greene will be in the same position.

C. G. Cockerill: Is the Matthews farm at Tipton the only place where serums 44 and 41 have caused the disease, that you know of?

Doctor Gibson: That is the only one we know of, and that is why we are especially alarmed about 44 and 41.

Mr. Cockerill: Is there any other state that you know of where that serum was the cause?

Doctor Gibson: The last letter I had from the state veterinarian of Indiana, said they were in very good shape, and thought they had the disease under control, until all of a sudden came a serious outbreak caused by serum.

Mr. Cockerill: We don't believe that this serum or virus has caused the foot and mouth disease, and I am satisfied that some of the best veterinarians in Iowa are of the same opinion as I am. I think the very greatest harm has been done against our hog cholera vaccination by all this talk about the serum, and that it has caused even more loss than the foot and mouth disease. I have vaccinated for two years as Doctor Stange knows, and have had the best luck with a lot of hogs. We have a county agent there, and one day you said to me that it might be possible you would have to go over all this herd that he has caused to be vaccinated—over 10,000 head—and I doubt if he has lost one per cent where they were vaccinated. It is a good thing for the meat producers of Iowa to know that there is success in vaccination.

Doctor Gibson: I would not for anything have it understood here that I was casting any reflection upon the county agent in Greene county or any other county. I said we might have to examine all the hogs treated, or examine all the records. The county agent, at my request, sent me a record of every bit of serum and virus that he had procured and distributed in Greene county. We found two or three instances where he furnished for the same man that the other serum was furnished for, but the dates were so far apart that it didn't cause any alarm.

Mr. Thompson: Concerning Matthews, I am personally acquainted with him and his son. Have you ever investigated to find out whether Mr. John Matthews had not been in Chicago with a shipment of cattle, and might have brought that trouble from the Chicago stockyards?

Doctor Gibson: I have not, but the field men surely have.

Mr. Thompson: I know they ship a great deal of stuff, and when I was there in July, they had a shipment of cattle, and it was in my mind that they might have done the same as the dog.

Doctor Gibson: That could easily happen. The government claims to have traced this disease twenty miles on a man's shoes in the snow. It is the belief of all interested (and we are all interested in hog cholera serum and all believe in it), that the virus would be more apt to be infected. A careful serum maker could be fooled and could draw virus from a pig that was in the first stages of foot and mouth disease, though showing no external lesions, and having fever from his cholera that couldn't be added to very materially by the other disease; and in that way he might draw a combined virus of hog cholera and foot and mouth disease from the same hog, and at the same time think that he was using all necessary precautions. Doctor Stange will admit that, because in the first stages of this disease the fever might run as high as a good case of cholera.

Mr. Brockway: I wish you would explain just how the authority on quarantine is divided between your office and the federal office.

Doctor Gibson: The first quarantine was of the entire state. The government can only quarantine by states; its authority begins and ends at a state line. They quarantined the state of Iowa as soon as they knew we had foot and mouth disease in the state. There came a time when we were begging for relief, and they were willing, as I said before, to release seventy-eight counties, holding the six counties in which the disease existed, and a border of clean counties around them. That is why the thirteen counties were put in a little tighter fix than they had been before, because the government required it in order to release about four-fifths of the state. I thought the people in that other fifth of the state would be willing to say: "Well, that is good; I am sorry we are not a part of that four-fifths; I am sorry we are the ones that are caught; but that is a great relief for the people of Iowa." But instead of that, they have just jumped on me and argued uphill and down that they should not have been quarantined. The new senator over here (Mr. White) is laughing; he was one that burned out several wires on me! Some of the republicans in his county say that the reason I have held his county so tight is because he is a democrat and I am a republican.

A Member: Can this disease be carried by fowls or pigeons?

Doctor Gibson: We believe it could be carried by any common carrier. The germ of foot and mouth disease has never been isolated; the same with hog cholera. The people who make the serum don't say that they know what hog cholera is. Here and there is a commercial firm that puts out literature saying that they know what the germ is, but it is all to facilitate the sale of their products.

The trouble came not only on account of Christmas meat ready for the market, but we were caught with thousands of head of cattle on summer pastures, where the water and feed ran out; and our veterinarians have run over the country day and night to see that that stock was all right, and to permit its movement to a certain point, so that we would know just where it was moved, and all about it. The auction sales have been under a ban, and the short courses. Referring to Ames, let me say again that they voluntarily declared the state short course off. I didn't have to ask them to do it, although I said it might be wise, but I was in hopes that the coast might be clear. They thought they wouldn't care to risk what stock they have on the college farms belonging to the great state of Iowa. Can you imagine anything, with a disease that we believe is carried the way foot and mouth disease is, worse than a public sale, where all come in and tramp over the same ground and go back at night? The extension department at once abandoned their short courses for fear of exposure. The poultry does not come under the government quarantine in this outbreak, but a poultry show will bring the people just the same as any other kind of a show, and if there was anybody in the community that had this infection on the premises, they would all stand more or less show of taking it home with them from a poultry show or any other public gathering. We made our own rule on the handling of poultry a little more strict than the government, in that we required that no poultry should go to market from a township in which the disease existed, except it be dressed. Outside of that township, it went in the ordinary way. Some of our poultry in carload lots, both live and dressed was not accepted at Chicago until we would make a statement that it did not come from diseased premises. The government required poultry from diseased premises to have the feet cut off, be scalded and dressed. In that particular, we have gone stronger than the government, but in every other particular we have followed the request of the government, and I told them at the start we would do everything in our power to enforce their requirements, in order to get through this as quickly as possible; and I think when the history of this outbreak is written, the state of Iowa will be credited with handling it better than any other state that was infected; and if we do get that credit, it reflects back to the government authorities that the politicians are trying to find fault with now because we have simply done what they said we should do.

The Chair: We will now hear Doctor Stange on "The Hog Cholera Situation."

HOG CHOLERA IN IOWA.

DR. C. H. STANGE, AMES, IOWA.

Members of the Corn Belt Meat Producers' Association, Gentlemen: I am glad of this privilege of meeting with you. It is noticeable that you have had one or more addresses on a veterinary subject at your last few meetings. If our profession has not been delivering the desired service, it is your duty to reveal the fact and indicate your wishes. If we cannot benefit the live stock industry, then there is no more excuse for our existence than there would be for the medical profession if the human race did not profit by the presence of doctors in our midst. Our interests are the same, although our duties are different and quite well defined. It has been my desire to see members of the veterinary profession become better acquainted with representatives of your industry, and offer assistance and counsel. The same should be equally true of veterinarians seeking the counsel of stockmen. The entire situation lies in the palm of your hand, to do with as you wish, and the veterinary profession would be glad to have your suggestions.

The work of the State Biological Laboratory during the past eighteen months has been based largely on the idea that the problem confronting us was not one of a profession, political party, class or single industry, but one concerning the state as a whole. Certainly, the loss of fifteen to twenty-five million dollars' worth of a single class of live stock during one year in Iowa must be a question which concerns every citizen of the state. It would be very unfortunate if foot and mouth disease should be added to the already too long list of contagious diseases affecting animals, but in any event hog cholera will probably remain the most significant disease of animals in our history of Iowa. Any plan for suppressing hog cholera, therefore, must be broad and free from detrimental influences, political, factional or otherwise. It must be based upon scientific principles, practically applied, and enforced with judgment.

In Europe, a very thorough and efficient organization of sanitary officers is maintained in order to check the many contagious diseases of animals which exist there. Our states have not reached the stage when such an organization would be supported. It was necessary to substitute something, so far as this could be done, and four veterinarians have been doing educational work, and in this way securing more or less uniformity in ideas and co-operation.

Since 1884, this state has experienced three severe outbreaks of hog cholera, which appeared in the form of "waves." The first came in 1886, the second in 1897, and we are just passing through the third. A short study of conditions convinced us that the immediate problem was to save all the Iowa hogs possible, and that the more deliberate and thorough work of complete suppression should be taken up when the disease is at its minimum. Our efforts, therefore, were designed to meet the existing conditions. Our plan must necessarily include the state as a whole.

The chief reliance was placed in vaccination and education. Vaccination is the practical application of the scientific fact that a hog once recovered from hog cholera will not contract the disease a second time, due to substances which circulate in the blood. If these substances are sufficiently concentrated, the blood will protect susceptible hogs when introduced into their body. Concentration can be secured by intensifying the exposure. The animal receiving these substances, however, soon eliminates them, and again becomes susceptible, while the animal producing them has lasting protection. Therefore, in order to make the temporary protection permanent, the animal thus protected is exposed to infection usually by inoculation.

The latter method, commonly called the simultaneous treatment, is recommended in all cases except pregnant or nursing sows, sucking pigs, or when only temporary immunity is desired. Our reports indicate that pigs from susceptible sows are more easily permanently immunized than those from immune sows. In a considerable number of herds, the pigs under sixty pounds from immune sows have lost their immunity in six to ten weeks' time, especially when a small dose of virus was given.

Too many people do not appreciate that in order to withstand the simultaneous treatment, the hogs should not be suffering from some debilitating condition. Too frequently we hear a statement as follows: "My hogs are not doing well, guess I will vaccinate them," and vaccination is ordered, whether the hogs are suffering from hog cholera, lung worms, intestinal worms, improper rations, mange, or any one or more of debilitating conditions. The results in such cases are usually more or less unsatisfactory. We should not lose sight of the fact that in order to secure the desired results, the hogs should be in the best possible condition, and that every detrimental influence operates in favor of the virus and counter to the serum. Therefore, every herd should be carefully studied by a competent person, and serum and virus used according to indications. Anti-hog cholera serum is specific in counteracting the virus, and we have no right to assume that it will prevent any of the numerous other infections which may accompany or are a part of hog cholera.

At the time the State Biological Laboratory was established, there was little or no regulation on any phase of hog cholera serum work. Eighteen months has, I think, shown considerable improvement in conditions. That there has been approximately 50 per cent decrease in cholera during 1914 is generally admitted, which means ten to twelve millions of dollars saved for this state.

The following summary compiled from all reports received from owners of herds treated with serum procured at the State Biological Laboratory may be of interest:

	Number treated	Number died before.	Per cent died before.	Number sick.	Per cent sick.	Number died after.	Per cent died after.
Serum alone	11,865	2,054	17	4,830	40	3,614	30
Serum alone	4,321	--------	--------	--------	--------	108	2.4
Simultaneous	39,415	3,174	8	5,643	14.6	4,326	10.9
Simultaneous	84,141	--------	--------	--------	--------	1,657	1.9
Total	139,742	5,228	--------	10,473	--------	9,705	

It is significant to note that in both cases where serum alone and where simultaneous treatment is applied in diseased herds, the loss is less than the number of animals reported sick at the time of treatment. One cannot help but notice also that the diseased herds were not vaccinated until 10.2 per cent were dead and 20.4 per cent were sick. This indicates that a diagnosis is not made sufficiently early in a large majority of the herds. The campaign of education conducted in co-operation with the agricultural extension department has to some extent overcome this, and both veterinarians and stockmen are becoming more prompt in their decisions and actions.

Much has been said about sterility in vaccinated animals. You are well aware that sterility was more or less prevalent before vaccination was known, so the question developed as to whether it was increased by vaccination. The following data gathered in co-operation with the federal Bureau of Animal Industry should be convincing:

TREATED HERDS.

	Herds.	Sows treated.	Pigs farrowed.	Sterile sows.	Per cent of sterility.	Average number of pigs.
Sows and boars treated	101	1,431	8,660	79	5.5	6.18
Sows treated, boars not treated	20	287	1,934	19	6.6	6.74
Sows treated, boars ?	5	28	177	--------	--------	6.32
	126	1,746	10,971	98	5.6	6.28

HERDS NOT TREATED.

	Herds	Sows treated	Pigs farrowed	Sterile sows	Per cent of sterility	Average number of pigs
Sows not treated, boars treated	11	164	986	12	7.3	6.01
Sows and boars not treated	67	835	4,048	62	7.4	4.85
Sows not treated, boar ?	9	104	338	--------	--------	6.25
	87	1,103	5,372	74	6.7	4.87

Attention is called to the fact that the percentage of sterile sows is greater in non-treated herds, and that the average number of pigs per sow is lower. Theoretically, therefore, one could say that vaccination is beneficial, but for the present let us at least assume that it is not injurious.

Does vaccination increase abortion among sows? is a very important question, concerning which we have no complete statistics. It is easily conceivable, however, that the simultaneous treatment may be followed by such results, and whether or not it is responsible, it is charged, and therefore this treatment is not recommended for pregnant sows, although thousands have been successfully so treated.

Reports on the use of state serum indicate that in 76 per cent of the herds reported as healthy at the time of vaccination, showed no loss after treatment. If the virus was properly handled, therefore, we may assume that on these farms no infection was established, but there remains 24 per cent where there was some loss. These cannot be ignored, and therefore the virus should be kept in the hands of those who have been trained to use it. This question is more pertinent at a time when cholera is less prevalent, and will therefore deserve close attention in the immediate future. Trained men should be kept in different districts of the state, to supervise the work in their respective districts.

What can be done by co-operation and education is indicated by the report of W. A. Posey, county agricultural agent for Clay county. There had never been a hog in the county vaccinated with the double or simultaneous treatment. "A strenuous vaccination campaign was started, and in six months, 566 herds, or 30,000 hogs were vaccinated. Clay county lost 20 per cent less than the average of the eight counties bordering or cornering on Clay county. This 20 per cent amounted to more than $150,000."

The state laboratory has made over 9,000,000 cubic centimeters, or enough serum to protect 300,000 hogs, worth approximately $3,000,000. This is quite easily estimated, but the benefits derived, if there be any, from a supervision of the distribution of virus as well as to determine so far as lies within our power, that every person using virus should know how to use it intelligently, combined with frequent testing of samples of commercial serum, especially when it seemed necessary, cannot be easily calculated.

At this point, I wish to call attention to the last wave of hog cholera in Iowa. It required three years for the disease to reach its maximum, which was, according to the United States Bureau of Statistics, about 30 per cent of the hogs. In three years more, the disease had receded to "normal." According to the same bureau, history began to repeat itself in 1912, and in 1913, or the second year of the wave, losses had reached upwards of 16 per cent, but according to assessors' figures, this was considerably too low. There is some justification, it seems, to assume that 1914 would have shown the maximum loss. As has been mentioned before, however, the loss was probably 50 per cent less, or near 12 per cent, whereas, precedent would have made it 30 per cent. Apparently, the year of maximum losses was eliminated entirely.

Allow me to call your attention to another point in this connection. There has been much said concerning the spread of hog cholera by the simultaneous treatment. This form of treatment was applied much more extensively during 1914 than ever before. The decrease of cholera in the face of this extensive use of virus with hog cholera serum does not seem to indicate that this is one of the prime factors in the dissemination of hog cholera. Though realizing the importance of carefully supervising the use of virus, I am more suspicious of the infected herd which is being neglected and of the careless methods of carrying on neighborly relations in many communities.

Inasmuch as it would be impossible to exhaust the subject in several hours, I am closing my paper with the hope that you have received at least some useful information.

Q. Didn't you say that you should not vaccinate the hogs until the cholera was in the neighborhood?

Doctor Stange: That is what we generally recommend.

Q. Wouldn't that be liable to be too late to vaccinate?

Doctor Stange: If people will vaccinate promptly when the disease appears, they can prevent a great loss; but their neighbors ought to vaccinate and prevent the spread of the disease. Where there are outbreaks, somebody ought to go there and supervise the work and keep the disease from spreading.

A Member: Out near Whiting, in Woodbury county, they vaccinate their pigs regularly two weeks after they are weaned, and I have done that every year for three years.

Doctor Stange: You wouldn't recommend that for every farmer in the state, would you? That is a question that we have been facing, whether we are going to work up to the point where we will vaccinate all the hogs, or toward the point where it won't be necessary to vaccinate at all. That is a big question for the state, and it hinges on whether all the farmers want to vaccinate, or control the disease when it comes to a time like this.

A Member: I would like to ask if there is any way that the farmer can have assurance of getting potent serum?

Doctor Stange: On July 1st, following the establishment of the State Biological Laboratory at Ames, the United States Bureau of Animal Industry was given authority to supervise the manufacture of hog cholera and all other biological products for veterinary use, and they are now maintaining government inspectors at Kansas City and Sioux City, and, in fact, in connection with all plants that have a government license. No plant can ship any product from one state to another unless it has a government license, and when they have it, they are under rigid supervision or inspection. I might say that it cost one company in Kansas City $5,000 to settle up with some of the farmers, and three or four licenses have been revoked, and there are two plants with suspended licenses now. Of course we can't take up matters that don't come to our attention, but when they are reported to us, we take up the matter immediately with the plant, and determine, if possible, where the trouble was. I want to say in this connection that a product that is used so extensively as hog cholera serum will never give perfect results in every case. That would be an ideal condition, but it is something you can't realize, because the conditions of the herd, the care given them, and all of those things have an influence; and so long as hog cholera serum is used, there is going to be an occasional herd where you will have trouble. You can't get away from that any more than you can get away from the fact that a man who is vaccinated for smallpox will sometimes have trouble; it all works on the same principle.

Mr. Cockerill: You recommend the simultaneous treatment?

Doctor Stange: That is what we generally recommend.

Mr. Cockerill: And you know some people in the state of Iowa that disapprove of it?

Doctor Stange: Of course there is a difference of opinion on that.

Mr. Swearingen: How large a dose would you recommend for 250-pound hogs?

Doctor Stange: Seventy cubic centimeters.

The Chair: Suppose a township didn't have hog cholera; there wasn't any of it close by, but they should give the serum alone treatment—would that be sufficient; would it clean it up?

Doctor Stange: No; that immunity would last from four to six weeks, and then your hogs would be infectious again; if the disease was brought in they would die just as they would before. You must have something permanent if you want protection.

A Member: Is the hog cholera serum made in such a way that when you use it, you would not be giving your hogs some other disease, say tuberculosis, or something of that kind?

Doctor Stange: I might say in connection with the manufacture of hog cholera serum, that the hogs are all tested for tuberculosis before they go into the serum production, and every hog is posted after it is through being used, to see that there is nothing wrong with it; so that we feel that there is very little possibility of disease being transmitted by the serum unless you are near a stockyard. That is one of the objections I have to a serum plant near a stockyard.

Mr. Cockerill: You keep the product of each hog separate all the time?

Doctor Stange: Yes; until the hog is posted.

A Member: Can Ames furnish the serum at the present time?

Doctor Stange: Not as much as the demand is. We have made over 900,000,000 cubic centimeters. We do business with the farmers directly, and the demands under those conditions have been so great that we couldn't supply them.

J. R. Doran: I have a few dead hogs lying around the place. I see the hogs have apparently the same disease that they had last year, and I have lost probably less than ten in the last sixty days, and no serum of any kind has come onto the place. There are 180 hogs that weigh 100 pounds and more, alive and doing well, and 100 or more pigs, healthy and strong. How do you account for this condition of affairs without the assistance of serum?

Doctor Stange: May I ask if those were pigs from immune sows last year?

Mr. Doran: I had thirty sows left after last year. We had 150 pigs from those sows. They all lived and did well for about a month or two; then they all died but six. These same sows have healthy pigs now.

A Member: Do you know that you have hog cholera on your place? You might have some other disease that is killing your hogs.

Mr. Doran: There are some of the old hogs lying around from last year.

Mr. Cockerill: When did you quit burning them?

Mr. Doran: When they quit dying. I suppose I have dried hog cholera on those hides.

A Member: Don't you think that Senator Doran and all of us fellows that have been in contact with him ought to be disinfected before we go home?

The Chair: I think the senator ought to have been disinfected before he came here.

Mr. Doran: My trouble is foot and mouth disease.

The report of the committee on Resolutions was read by Chairman Brockway, and upon motion was adopted section by section. The report as adopted is as follows:

RESOLUTIONS.

We, the delegates of the Corn Belt Meat Producers' Association, at annual convention assembled, at Des Moines, Iowa, December 9, 1914, congratulate the association on the continued loyalty and enthusiasm of its members, and the important service that it is rendering to the state of Iowa. The association has been instrumental in securing for the people of Iowa the return of the stockman's transportation, improved railroad service, a reduction in the railroad rates in Iowa of from 18 to 50 per cent on live stock, a re-grouping of the Iowa-Chicago live stock rates, greatly benefiting the shipper, improved service at the Chicago stockyards, a feeding-in-transit rate on cattle and sheep; co-operating with others, better water was secured at the Chicago stockyards, reducing the shrinkage of cattle about 25 per cent; prevented a 10 per cent advance in freight rates in 1910; establishing the office of Commerce Counsel in Iowa; made a winning fight to retain a 75 per cent rate on feeding cattle and sheep; obtained the adoption of a 16,000-pound minimum car for hogs, and a 20,000-pound minimum car for cattle in Iowa. Has made a persistent and so far successful fight to prevent a general increase in freight rates. Able representatives have appeared before the state and national law-making bodies to represent our interests.

Measures that we have in the past endorsed by resolution, and that were supported by our organization, have largely been adopted into law and are now the settled policies, while time has proven that our opposition to certain measures and practices was well grounded.

We have repeatedly, by resolutions adopted, and by personal representation before congress, opposed the free and unlimited importation of cattle, meats, hides, and grain, and urged upon congress the enactment of laws that will protect the Iowa producer. Furthermore, we believe from the information at hand that the present disastrous foot and mouth disease can be attributed to the importation of infected hides that come to us by the present open-door policies. Drastic inspection laws should be adopted and rigidly enforced. We are opposed to the importation of live stock and live stock products from countries which do not maintain the same rigid inspection that we maintain.

Resolved, That the state of Iowa should provide that competent engineers and accountants be employed to look after the interests of the people of Iowa, to the end that a just physical valuation of the railroads be made, as the railroads have representatives to look after their interests in the valuations now being made; and we believe that the interests of Iowa should be equally well represented.

Resolved, That the state of Iowa should immediately provide the railroad commission with funds to employ special help and to incur necessary expenses in the advance rate case now before the Interstate Commerce Commission.

Resolved, That we favor the appropriation, by the legislature of Iowa, of funds sufficient for the manufacture of hog cholera serum to supply the demands of the stock raisers of Iowa.

Resolved, That we favor the enactment of a law providing for a long term farm mortgage system, by which bonds may be issued, secured by farm mortgages.

Resolved, That there should be an official investigation of the condition and practice at the live stock market centers, to ascertain whether such violent fluctuations in the prices of live stock can be satisfactorily explained. And in any such investigation, this association should be represented.

Resolved, That, deploring the condition of the quarantine for foot and mouth disease, we believe that a more limited quarantine would have been more effective, and would not have caused so much inconvenience and loss.

We here express to Mr. A. Sykes, who has been president of this association for eight years, our thanks and appreciation for his untiring efforts in behalf of the association and the stock raisers of Iowa. We again commend the faithful service of Secretary H. C. Wallace; and express our appreciation for the services rendered by the rest of the officers.

President-elect Corrie was thereupon introduced by Chairman Gunn.

President Corrie: Gentlemen, I have felt like talking sometimes, but I thought it was best for you to thresh all this business out yourselves. I did feel, however, as if I wanted to stand up and face you fellows before I began the work of the year. It is a work that has come to me very unexpectedly; I had no thought of such a thing when I left home. Mr. Sykes, as I said the other evening at the banquet, spent the evening with me a couple of weeks ago, and we talked about association matters, but this matter of the presidency did not come into my mind, nor was it talked of at all. In fact, I had not thought of it until on the road up here Mr. Drury said: "Sykes is going to be president again?" "As far as I know," I replied; "I don't know how he is feeling." Early the next morning, Drury came to me and said they had had a meeting the night before, and they wanted to know whether I would accept in case I was elected; and out of that grew that fact that I was elected.

Now, gentlemen, I don't want to detain you, but I do want to say this: In the directors' meeting, through my efforts, it has been arranged that Mr. Sykes is to assist in all these important rate hearings or trials before the various boards. That was at my request; so you will understand, when you see it in the newspapers that Mr. Sykes appears, how it comes. He has been added to the executive committeee partially at my request, as an extra member, so that I can work in conjunction with him; and I mean to do that; and I want you to stand behind me and behind Mr. Sykes in all the work that we are called on to do. The work looks wonderfully big to me, and I am a green farmer who has not had very much opportunity for educational advantages. I just grew up back there in Cedar county, and began farming before I got to be of age, and have worked at it there and in Ida county and in various places, and come in contact with you men and others, so that I have worked up to this honorable position; and I hardly know why I was chosen as the head of this organization. I pledge myself to do all that my ability permits me to do for the association in the year before us, and I ask your cordial support and your earnest effort to help in this work.

Mr. Brockway: There is one little matter I want to bring up. President Pearson made a suggestion to me this afternoon in the matter of the present quarantine. Suppose this outbreak should spread over the state. Our organization ought to have a committee which could work in harmony with the state veterinary department. I suggested the matter to Doctor Gibson, and he said he would be very glad to co-operate with any such committee. I would move that our executive committee, in any matters relative to the present outbreak of the foot and mouth disease and the quarantine thereof, be ordered to take up the matter and represent our association with the state and federal departments.

Motion seconded by Mr. Cockerill, and carried.

Upon motion, duly seconded, the convention thereupon adjourned *sine die.*

PART X

Papers on Agricultural Subjects, Live Stock and Extracts From Bulletins

THE FOOT AND MOUTH DISEASE.

(Paper Read by Dr. K. Y. Stouder, Ames, Iowa, at Annual Meeting of the Aberdeen Angus Association.)

This Aphthous fever or Murrain of Europe sometimes called Aphthous Epizootica Vesicular Apthae and Eczema Epizootica in the classical discussion, but in common parlance receiving the highly descriptive term of foot and mouth disease and also hoof and mouth disease, has again invaded our country, obtained a foothold in one of our greatest markets and worse yet, came very near getting a foothold in our range country.

Briefly, the history of this disease is that it has prevailed in Asia from time immemorial, gained an entrance to Europe in the eighteenth century and at various times since has occurred in widespread outbreaks in continental Europe as well as England. It has also been imported into both North and South America by cattle traffic from Europe and other means at various times. It was imported from England to Montreal in 1870 and spread over most of New England. Very little transportation of livestock westward caused the disease to become rather self-limiting naturally and its course was spent in a few months. Authorities then present seem to place great credit to the slight amount of westward livestock movement as the most effective barrier operating to control the 1870 outbreak.

Those outbreaks occurring in the United States within the memory of the present generation are as follows: One in 1902 in Massachusetts, Rhode Island, Vermont and New Hampshire, which was controlled comparatively quickly and rather cheaply, since less than 4,000 head of cattle were destroyed at a total cost of about $300,000.

The next outbreak was in 1908 and was more expensive in that Pennsylvania and New York as well as most of the North Atlantic states were involved. This outbreak was more expensive to control since more territory was involved. In both instances the infection was proven to have been imported into this country but not through channels under the quarantine control of the federal Bureau of Animal Industry.

The so-called foot and mouth disease occurring in Kansas in 1884 was not the infectious disease Aphthous Fever of the old world, but rather gangrenous ergotism so often seen among cattle fed upon grasses affected with that particular fungous growth. The foot and mouth lesions produced are similar in a way to those of the Aphthous Fever and are mistaken as to diagnosis at times especially as to the foot lesions produced.

The causative agent of the true foot and mouth disease is without doubt an organism very small in size, since it seems to pass the Berkfeld filter, but not the finer Kitasato filter. That it is due to infection, however, is easily appreciated when one remembers that excluded from England in the middle of the eighteenth century it did not recur for a hundred years and then only after being imported, but did not occur at that time in districts where new stock was not taken.

The infection is especially to be found in the apthae or vesicles of the mouth and interdigital spaces. Abundant drooling of saliva quickly and easily infects drinking water, mangers, roads, pastures and halters and therefore readily infects healthy stock following diseased animals. From the vesicles in the interdigital spaces the pastures, floors of stables, and manure are easily infected. From those found on the teats the milk is easily infected as are also the milker's hands and suckling animals or humans consuming the milk. If dried on litter its distribution may be by winds or on the feet of men and animals. The conditions contributing most to the spread of the disease are the free movement of ruminant animals and swine. In countries depending upon central markets for the distribution of livestock wide outbreaks can occur quickly, once the market becomes infected, but the infection is at first confined to those animals which have been in such markets or those associating with them or following in pens, cars, roads or pastures used by such animals.

The symptoms are usually a moderate fever after a short period of incubation varying from twenty-four hours to five or six days and occasionally drawn out to two weeks. Cattle usually show the disease within forty-eight hours of first exposure, but there are nearly always a few which do not contract it at all so far as clinical symptoms will reveal.

The fever is of course usually accompanied by chill, dry muzzle and erected hair. Redness and tenderness of mouth lining, saliva drooling from the mouth with sometimes froth due to the working of the jaws and a peculiar smacking sound of the tongue on the palate is heard. The result is impaired appetite of course, and even refusal to eat at times, owing to the soreness of the mouth and pharynx. Lameness is noted in some when the foot lesions are found to be severe. The blisters are to be seen on the tongue, mouth lining, in the pharynx and at times on the muzzle, which burst soon after formation, showing a red base clearly defined and may leave shreds of torn epithelium. The interdigital space is the principal seat of the foot lesions where the blister usually is smaller than that of the mouth and often leaves an ulcer after its rupture because of the filth of the stable with which it becomes contaminated. The renewal of the mouth lesions is rapid and usually complete in four or five days after rupture of the vesicle. The teats are often involved with similar vesicles to those of the mouth and abscess of the udder occasionally results.

In sheep and swine the foot lesions predominate and like cattle if not kept clean and free from infection shedding of the hoof is not uncommon in aggravated cases. Lactation in milking animals is usually impaired during the most severe part of the disease but usually returns to about 75 per cent of the normal flow as the disease subsides and the appetite returns. Beef animals may lose flesh to a considerable extent and are sometimes slow to recover it. Herein lies the source of greatest loss in foot and mouth disease. It is doubtful if any of the warm blooded animals are immune, though it seldom attacks any but cattle, sheep and swine. The mortality, however, is not high in mature individuals under good care and surroundings, though young animals fed or infected milk may suffer such severe and extensive infection as to terminate fatally. Of the pure bred cattle insured with the Agricultural Cattle Insurance company in Scotland, 1,474 head died during the epidemic of foot and mouth disease in Great Britain in 1855 to 1860, yet not one was reported dead of the foot and mouth disease. James Law, former Dean of Cornell University Veterinary College and one of America's most experienced veterinarians with wide European and American experience, advises that he became very familiar with the disease in Europe in his early life and later in America while filling official commissions for the United States government. Speaking of England, he says: "Cattle brought in at the great autumnal markets almost of a necessity brought with them the foot and mouth disease. During the next fortnight they passed through the plague on the feeding farm, all recovered during the ensuing fourteen days and the following spring when the dairy cows freshened there was no germ left to infect the offspring."

In the epidemic of 1870 there was little or no official restriction to amount to anything and the disease was self-limiting. At this time, however, we must remember that there was little or no cattle transportation or stock car movement especially westward and that the winter freshening of cattle was not so general as it is today. These conditions would tend to give the germ little or no new material to work on once all individuals of a herd or community were attacked and had been recovered for several weeks before new arrivals came into the herd. It is probable also that the summer temperature had much to do with the eradication of the disease as it is easily destroyed at a temperature of about 88 degrees F. On the other hand in parts of the tropics of Asia this disease is so prevalent that all newly imported animals are expected to have it and separate pens are provided for interning them for a few weeks until the acuteness of the attack has passed, when they are permitted to proceed to their destination. This is in harmony with European experience and result and would lead us to believe that the statement that it requires two years for complete recovery to take place has been in isolated instances of chronic infection bearers, a condition met with in practically all infectious diseases.

We have now in America an experiment under way in the attempt to save the individuals exhibited at the National Dairy Show which will give us some first-hand knowledge, no doubt, just whether the quarantine method coupled with inoculation tests before releasement or absolute slaughter, is imperative in the certain control of foot and mouth disease.

The evidence of history is that where the infection is found early the use of the slaughter system coupled with rigid inspection has kept America remarkably free from the disease and at a moderate cost when the volume of our livestock business is taken into account. On the other hand some authorities are contending that we can control this disease by quarantine, disinfection and a rigid patrol of infected territory if coupled with stringent rules for the importation of animals and their by-products, as feeds and fodders which might carry the infection.

After several years' experience in various capacities dealing with the administration of livestock sanitary laws and attempts to assist owners and the public in general to lessen our livestock losses from infectious disease, the author doubts if with the support and organization given at present this plan could be made effective in any but isolated cases, by our existing sanitary boards. To succeed it would need larger funds, more effective action and the moral support of a better educated public opinion than we find existing at present towards the control of contagious diseases in general.

To properly draw a conclusion of the best procedure for the future, remember that the slaughter method has in the past eradicated the disease and kept the country free of it for several years at a time. It has accomplished its purpose. On the other hand once the disease is here herds are involved which represent many dollars of value and many years of labor. When remorseless slaughter of infected and exposed animals is practiced it is but human for owners to remonstrate and mayhap to attempt evasion. They sometimes may hide its existence and thus defer action which might have lessened its spread. In other words, too drastic action can easily engender antagonism for the system of eradication when hearty cooperation should be cultivated instead. Advocates of the slaughter method will contend that it immediately disposes of the center of infection and thus with the further production of the germ. Under this system, however, cases are sometimes not found till at their height and often at a time when in a few days they would all be on the way to recovery.

In extreme cold weather the lesions are sometimes healed in many of the individuals before sufficient excavation can be done to accommodate the entire herd when slaughtered. In a week more the infection of that herd would be subsiding. The premises would not be more infected by rigid quarantine and strict isolation coupled with thorough and repeated disinfection. The cost would be less than by the slaughter method since under the slaughter method disinfection of premises must go on just the same and isolation of the premises from new stock looked after. The attitude of the owner should be better as his business would be harmed much less and therefore his cooperation with the plan more hearty, getting outbreaks or suspicions of outbreaks reported so much earlier as to be of material benefit and assistance to the system. In short, public opinion could be incorporated in this plan easier and its forceful energy would be felt and soon recognized as an efficient force in control work. It is doubtful if in actual practice today such a plan could be made to operate successfully except in rare instances because we do not have a properly informed and willing public to do the cooperating.

Whichever method we may finally adopt to control foot and mouth disease or any other contagion, let us remember these facts regarding all infectious diseases. In the first place, we hear little of contagious diseases in a new country, as a rule. Many people believe that this is due to climate, soil or water, but the same is true of pests affecting our field crops, and as livestock population increases in density on the soil so do the infectious diseases increase to prey upon the host. This fact is world history regarding the infectious diseases of man and the lower animals as well. It is as true and firm as the hills. It is a fact that must be met squarely. Man's answer is that rigid quarantine of the causative factor once located, coupled with careful disinfection, has made tropical pest holes and plague-ridden tenements fit for the habitation of man or beast. This has been demonstrated a fact repeatedly. Wherever this work has been accomplished, however, it has been under the guiding hand of a scientifically trained head selected for efficiency and tact and bearing a reputation for results accomplished because of a knowledge of the subject in hand. No attention can be given to partisan politics of factional desires in making these selections, for sanitation and politics are as incompatible as water and oil. Livestock losses in the United States annually exceed two hundred millions of dollars. Iowa's loss often exceeds twenty millions and is always several millions annually. With increasing livestock values these losses become of more and more vital importance.

We are fully sensible to the fact that we are an agricultural country first, last and all the time. Our every industry is dependent upon the successful progress of our agricultural activity and just as certainly are we aware that the continued success of a profitable agriculture in our country is dependent upon the possibilities of successful livestock production.

Let us rise out of this baffling network of superstition and the hazy idea that mere luck and good fortune or ill governs the destinies of our agricultural activities and instead turn the light of science based upon coherent investigation to control this great source of annual loss to agriculture and the world. To do this may involve the postponement or surrender of private interests and the abandonment at times of local advantages but compensation will be found in the assurance that the common interest is served and the general welfare advanced.

We must coordinate our work and for the protection of many million dollars worth of livestock be willing to spend more than a paltry few thousand annually in such a great and vital work. We must create an efficient scientifically trained corps of experts in full sympathy with the advancement of agriculture in every phase to watch over and guard this industry from disease. This service must be so created as to give assurance of respect from all interests involved. Able enough to create a public sentiment which will respect its decisions and policies, with no partisan politics and factional entanglements, so that no exceptions can be found to its rules and regulations. It must be free from local attachments which might hamper the enforcement of what is known to be for the greatest good of the greatest number.

It must be sufficiently supported financially to insure that efficient men can be attracted to it who are capable of outlining such a broad policy for the control of animal diseases. Its cost need not to exceed one per cent of our average annual loss from disease at present.

AMERICAN DRAFT HORSE BREEDING METHODS AS COMPARED TO EUROPE.

(Paper read by H. Lefebure, Fairfax, Iowa, at Annual Meeting of Iowa Draft Horse Breeders' Association, Des Moines, Dec. 30, 1914.)

The American methods, I am sorry to say, are very diverse. We have some breeders who pay close attention to their live stock, who feed well and use the best of judgment in caring for their live stock, but too many of our farmers use too little help upon their farms and undertake to do too must themselves.

I did considerable traveling about this state last fall in search of a few native pure bred Belgian stallions to fill some of our empty stalls. Among those I purchased were a couple of two year olds that weighed 1980 and 1940 pounds respectively upon arrival at the farm, neither having as yet shed a tooth. I also found some very good and growthy yearlings that were as good as could be found in Europe.

Upon the farms on which I found these good colts, I noticed that the mares were in good condition, that the colts in pasture were fed grain whenever the grass was short, and that the owners were men who marketed their grain by feeding it with care to the stock upon the farm. They were men who took much pleasure and enjoyment in watching the colts enjoy a good feed. They were men I wouldn't be surprised at seeing sit on the top of a board fence watching the hogs crack corn and be so interested as not to hear the dinner bell ring. Men who will stop a little and watch the colts enjoy their feed are as a rule the successful ones; they are the European kind—the kind that keep enough help to do the work properly.

Getting back nearer my subject of comparisons between European and American methods, I will compare with Belgian methods, inasmuch as I am more familiar with them, knowing as I do that unfortunate little kingdom as well as I do the county of Linn which has been my home from the time of my birth.

When the horse breeding season approaches, some American farmers make no arrangements whatever and simply use the first stallion that comes along, regardless of quality. His next neighbor permits this same stallion to go by and takes his mares off to the best stallion, regardless of cost.

We find some of these same conditions in Belgium. The men without ambition raise horses to sell at low prices to be used for ordinary purposes, while their ambitious and careful neighbors breed horses for the show ring and to sell for breeding purposes at attractive prices.

The shiftless Belgian breeder cannot make as serious a mistake as can the American, for no stallion can be used for public service in Belgium unless he has passed inspection for soundness, size and quality by a jury of five competent men consisting of three horse judges, one veterinarian and a secretary, all appointed for the purpose by the directors of the Belgian Horse Society. In this way the careless breeder has no opportunity to use an inferior stallion.

The jury that passes upon the stallions is paid by the government, there being no cost to the owners, but all stallions to be examined must be assembled at the most central village of the commune, each commune being about the size of one of our townships. The date for said inspection in each commune is advertised in the agricultural papers and by the posting of bills in the public places. This method of inspection, I think, should be adopted by the lawmakers of our great state. Compelling many of our stallion owners to send from eight to twenty miles for a veterinarian is very expensive and impractical.

When foaling time comes the Belgian farmers always watch their mares. Their farm help sleep in the stable the year around and veterinarians, being plentiful and reasonable in their charges, are always called to assist the mare and new born colt. As soon as the colt will eat a little grain it is given a private feed box in which it finds a variety of grain at all times. When the mare is worked the teamster brings her in to give the colt a forenoon and afternoon lunch during which time the teamster himself goes in for a bite. He doesn't hurry —they seldom hurry, but all their work must be properly done.

As soon as the clover is in bloom they start cutting a little by hand each day, tie it up in bundles of proper size for a feed for a horse or cow and haul it in to be fed to the work horses, the little colts and the milk cows. As soon as the clover is fit to feed very little grain is fed to matured animals. Each horse gets a bundle of this clover morning, noon and night. Their wonderful dairy cows, even though they be knee deep in grass, are given each a bundle of this green clover when stabled to be milked morning, noon and night. When the clover patch is all cut, the second growth at the corner where they first started cutting, is large enough for a second cutting. The weather is cool, moisture abundant. The clover does not mature fast as in this country, but affords great quantities of feed.

The little colts make a wonderful growth by weaning time and the successful breeder keeps his colts on full feed until matured. The successful Belgian horse breeders—the ones who have good strong stallion colts to offer buyers every year—are men who feed grain twice daily to their yearling and two year old stallions, even though they be knee deep in grass. Very few of our American horse breeders crowd the colts along until maturity. If they would care for their colts as do the Belgian breeders, if they would care for the colts as the most successful of our Iowa pure bred cattle breeders care for their calves, our American pure bred horses would compare with those of Euope as do our American cattle with those of England and Scotland.

I often hear men of this country say: "That colt was crowded and will have its growth early." I say it is just the opposite; the colts that we keep growing constantly will develop into much better and stronger horses. The colt that has been allowed to stop growing at times is the colt that I would expect to mature early and grow but little after three years of age. Many of our American breeders do not get their colts accustomed to eating grain before weaning time and allow them to be stunted the first winter. These colts will never make up the time lost. They will never be so large or nearly so large as the colts that are kept growing as are the colts of Belgium. Neither will they sell for half the money.

The foreign powers are destroying each other at the present time and many of the very valuable horses of Belgium have been destroyed. Indigene de Fosteau, the greatest draft stallion that ever lived, the only stallion that ever carried off the grand championship for four years in succession, a stallion that was worth $30,000 when young and changed owners and localities at the age of fourteen for $10,000, has been killed. His owner, Mr. M. Bury, was shot while trying to defend his prize horse. Some of the valuable stallions were taken to Holland and some to England. There is no question but that the draft horse industry of Belgium is receiving a terrible blow and that now is the opportune time for owners of draft mares in America to take advantage of the situation by caring for their young horses as do the Belgian breeders. Our American dealers will gladly pay you good prices for colts of sufficient size and strength but we cannot use the undersized ones. We cannot sell them. I have purchased some of them, but for no other purpose than to express appreciation of the continued patronage of good old customers, but I have lost money on every purchase of this kind.

I will now switch off onto another branch, government encouragement. What the Belgian government did to stimulate interest in the constant and continued improvement in their breed of horses is wonderful. There is seldom a week when there is not a horse or colt show in some commune or other of Belgium. The medals and cash prizes are furnished by the government and on account of the large number of entries in many of these shows, ten prizes are offered in each class and the judges must find and place the best ten. These shows are one day shows. The horses are taken in early, are on exhibition during the day and home again at night. One show is a colt show and then a two year old filly show and then a two year old stallion show and then the mare show and the stallion show.

There are several stallion shows each year in each of the several provinces of Belgium, one for government inspection for service license at which prizes are given to the ten best, the regular fall stallion show and then there is the show of aged stallions to compete for the pensions offered by the province to the ten best stallions. These pensions are payable one year after date provided the horse remains worthy of it and is still owned in that district. Another district show for matured stallions is one at which each of the best ten are given 1,500 francs. Then there is the national show at which all the first prize stallions of the whole nation compete for the national pension. This show like the others, pensions the ten best, the highest being 6,000 francs payable in four equal annual payments beginning one year after date. Stallions already drawing a national pension are barred from competing again, but they must appear at this same show in order to draw the annual pension then due to their owners.

The combined prize and pension money drawn by the better class of stallions of Belgium together with the service fees they earn for their owners amounts to from $3,000 to $12,000 per year. You may think I am exaggerating this, but as a proof I will give for example, Indigene de Fosteau, the prize stallion that was shot by the Germans last month on account of his getting unmanageable while being taken across to Germany. The service fee of this stallion as well as for several other champion stallions of Belgium, was 500 francs for the season, payable in July. The breeding of 100 mares per season is not at all uncommon, making 50,000 francs ($10,000) in service fees and say $2,000 drawn in government pension, district pension, provincial annual prize of 1,500 francs and other prizes would make a $12,000 annual income very common for their best horses.

By this you will see that we must not wonder at these best breeding horses changing hands among the leading breeders of Belgium at from $15,000 to $30,000. They work these valuable stallions enough to keep the muscles hard and strong. They claim that allowing the muscles of a sire to become soft may have a tendency to cause degeneration. I have seen Paul, the grand champion stallion of Belgium in 1912, out in the field hitched single to a plow and pulling it with perfect ease while the plow was running eight inches deep.

BREED EXTENSION.

(By Charles Gray, Chicago, Secretary American Aberdeen Angus Breeders' Association, read at the Annual Meeting of the Iowa Aberdeen Angus Association.)

Extension has become the byword, password and watchword in everything pertaining to education in Iowa. Many states can boast of wonders that have been accomplished by their extension department but none can show by natural and artificial results such a monument of achievement to the live stock industry of the country as the breeders of Iowa.

Due to the luxuriant conditions Iowa has been favored with, practically every useful breed of domestic farm animals has spread, as it were, with the ease that plants have been disseminated by the winds of the prairie.

One has only to glance back a few decades to find Iowa the western frontier with all that was good and great in live stock lore back east. Today Iowa can boast of having reached the highest pinnacle of fame in the production of farm animals. This is especially true of Iowa's operations in the production and extension or distribution of the Aberdeen Angus breed of cattle. In fact Iowa is the best example of extension in every sense of the word which we have in the country. Iowa has not only advocated extension of the Aberdeen Angus by every theorist within her borders, but through publicity and practical men she has spread much information within the reach of everyone interested in Aberdeen Angus cattle.

From the small beginning of a few bulls which were imported by a Kansas ranchman in 1873, we have recorded nearly 200,000 Aberdeen Angus cattle in this country. Although a few bulls were brought from Scotland to a Kansas range in 1873 it was not until the eighties that Aberdeen Angus cattle fully established themselves as the invincible blacks in America. From 1880 to 1883 they were brought to this country in such droves that it is estimated over 2,000 were imported and distributed in America.

In 1883 the Aberdeen Angus Association was organized and in 1886 the first volume of the herd book was published. It contained 5,200 pedigrees. The membership of the association in 1886 was 112, while at present it is over 3,000. Of these, Iowa can boast of 850. In 1886 Missouri had twenty-eight members, Illinois eighteen and Iowa twelve. In 1893 or at the end of the first ten years' life of the association, Illinois had seventy-eight, Iowa forty-six and Missouri thirty-three. Ten years later in 1903 Iowa had 209, Illinois 201 and Missouri ninety. Eleven years later which brings us up to the present time, Iowa is represented by 850, Illinois 432, Missouri 269.

In the first volume of the herd book, Missouri recorded 459 animals, Illinois 394, Kansas 226 and Iowa 127. Only three breeders in Iowa recorded over ten head each. What a difference thirty-one years has wrought in Aberdeen Angus circles! While some may feel a little discouraged on account of the ravages of the foot and mouth disease and the manner in which it is being handled in some states, the above facts should make everyone feel like congratulating those who have made possible the extension of the Aberdeen Angus breed to such great numbers as at present.

When the first herd book was published, Illinois was represented by pedigrees from thirty-two breeders, Missouri twenty-seven and Iowa twenty-six. In the last volume issued in November, 1914, containing pedigrees received at the office in less than a year, Iowa is represented by 553 breeders and pedigrees of 4,468 animals, Illinois 250 breeders and 1,508 animals, and Missouri 251 breeders and 1,538 animals.

Although sheer merit has been the principal factor in disseminating the Aberdeen Angus in this country, just as it has been in the breed's native land, it is nevertheless true, publicity has been the vanguard of proclaiming the superiority of the breed. Comprehensively speaking, publicity is the force that has accomplished the results the breed can proudly boast of at present.

Publicity can take so many forms that one can see that directly and indirectly it has been instrumental for all breed extension in every country. The exhibits of Aberdeen Angus at the leading shows, fairs and expositions of this country and other countries are probably the most concrete examples of publicity we have had recorded up to date. The exploitation of the breed in its native habitat in northeast Scotland and in the British Isles by means of exhibits at fairs, was the first thing to attract the attention from beyond the breed's localized county sphere. A further demonstration of its merits over all breeds was portrayed on continental Europe at Paris, France in the seventies. The heralding of the Aberdeen Angus overwhelming success at Paris was the substantial means of convincing the American cattlemen the breed was par excellence in the production of beef and was no doubt the greatest factor in introducing the breed so quickly and in such great numbers in the early eighties in America.

Facts relative to the introduction and migration of the breed in America in the hands of some of our most brilliant writers could be woven into a story that would entrance the most indifferent breed-extension thinker. The breed's extension by practical demonstration in the show rings in America is like the history of a victorious people. The Aberdeen Angus, as it were, forced their way by sheer merit and possessed the richest land of the corn belt. From this center of cattledom through the breed's inherent efficiency it has constantly radiated its influence on the cattle industry in every direction.

Contemporaneous with the unlocking of the vast fields of plant fertility with the plow in the west a generation or two ago, came the necessity for improved live stock. State boards of agriculture have greatly aided the extension of breeds by liberal premiums and the educational exhibits that have been in evidence at leading fairs in the past.

Other agricultural authorities and enterprising business men have made much of our breed extension possible by their loyal support to inter-state district and county fairs. Some people believe we have reached our zenith in point of number and quality of our fairs and shows. Others believe we are just in our infancy in this form of breed extension. The difference of opinion comes from two distinct classes of breeders, namely, those who exhibit and those who do not exhibit. Our leading fairs and shows as a whole are reaching larger numbers and they have become vast institutions of extension and learning for all who attend. The cooperation of the American Aberdeen Angus Breeders' Association with all state fairs and shows as far as its finances would permit has helped to make the extension operations of Aberdeen Angus breeders profitable. The judicious manner in which the American Aberdeen Angus Breeders' Association has spent its money whether it was in large or small sums, has borne fruit which has been worthy of being heralded in every cattle section of the country as well as abroad. Notwithstanding what has been accomplished at the leading fairs where cooperation has reached its highest degree of efficiency many improvements can be made during the next decade and greater numbers can be reached. Beyond the reach of the state fairs and shows and expositions there is a field of greater vastness than has been reached or can be hoped to be reached by state fairs and shows. The county, street and local fairs will undoubtedly rise to every occasion as it naturally develops. One is safe in saying that if we progress in the matter of fairs and shows during the next generation, as we have during the past, and there is every reason to believe we will far surpass, we should be able to extend through fairs of great and small degree an opportunity for everyone to review breeds of live stock in general and Aberdeen Angus in particular.

Much credit is due the colleges and universities of the country for the substantial manner in which they have extended the merits of improved live stock. The Iowa State College is a shining example of what can be done with profit and at the same time furnish lessons of a scientific and practical nature. The merits of the Aberdeen Angus have not only stood the most rigid tests in extension trips among practical farmers but they have also weathered the most searching investigations of university and college men who are constantly delving into every atom that comprises the animal and plant kingdom. I firmly believe the success which the Iowa State College has attained with Aberdeen Angus cattle is the most substantial evidence of merit any breed has attained in the state of Iowa, and I further believe much of the popularity which Aberdeen Angus enjoy in Iowa is due to its record of superior performance. What has been accomplished in extending the Aberdeen Angus breed by the Iowa State College the past decade is a symbol or promise of what we may expect when they get the various departments of their division of extension in a state of preparedness whereby they can invade any part of the state in any desired number necessary to impress everyone within the borders of Iowa of the real significance of breed extension.

Another form of extension which is as old as the breed in this country and which has done much in popularizing it is the public sale which has been held by individual breeders and combinations of breeders. The support the breeders have given the public sales as a whole has been the means of stimulating the trade on many occasions when it was dull with those who preach and believe in only private barter. The most authentic material we have on values during the history of the breed in this country and in Great Britain were obtained from the results of public sales. Public sales are as great an attribute in the success of breed extension as exhibits at fairs and form as valuable a part in the history of any breed.

Probably no organization of the nature of the American Aberdeen Angus Breeders' Association has been more diligent in the discharge of its duties which involve the primary functions of keeping a pure and systematic record. In addition to transacting the routine work of its office the association adopted a plan a few years ago of holding spring bull sales. The plan has proved the greatest breed extension factor the trade has ever experienced in the sale of bulls in this country. Every year the breeders become more anxious for the bull sales and greater extension of the plan and policy under the auspices of the association. The prestige of the association and the economical manner in which the successful sales have been conducted proved the most popular movement the association has ever attempted for its members. Its success has attracted the attention of breeders of other breeds and organizations of our nature. What has been made possible and successful by the American Aberdeen Angus Breeders' Association can also be extended in a practical manner by such organizations as the Iowa Aberdeen Angus Breeders' Association and the county associations, which are certain to develop in the future as soon as the colleges and universities can educate enough experts to place in each county. There never was a time when we were in greater need of more experts for breed extension in every county in the country.

The sales the American Aberdeen Angus Breeders' Association conducted in the south in 1914 through the cooperation of the federal government's extension department, which was brought to such a high degree of perfection by the late Doctor Seaman Knapp and is being still further augmented by his son, gave breed extension in the south an impetus that has no parallel in the history of the pure bred industry in this country. A decade ago one could not have dreamed of development in the south such as exists at present. Iowa people in general and Aberdeen Angus breeders in particular should feel proud of what the Knapps of Iowa have done to rejuvenate agricultural conditions in the south. The breed extension made possible in the south last year was the best market the Aberdeen Angus breed had and will undoubtedly continue to be one of the best markets the breed will have for many years. I trust the Iowa Aberdeen Angus Breeders' Association will do everything within its power to foster the extension of the breed it represents not only in the state of Iowa but also in every cattle section of the country.

Last but not least, after all forms of breed extension of which the above mentioned are but a few, the greatest factor in the extension of anything is the press, and breed extension naturally has been fostered chiefly by the farm journals and on them depends the destiny not only of our breed of cattle, but all breeds. Without the good service of farm journals which has been rendered during the history of the Aberdeen Angus breed in America, which has covered a period of good, bad and indifferent times, the achievements of our favorites would still be hidden as it were under the canopies of the show tents or pavilions where but a comparative few were fortunate enough to be spectators. The association has had a splendid opportunity to study comparisons in its efforts along this line by advertising by circular letter, folders and booklets. Although good results have been obtained from the efforts of the association only a favored few who had more or less knowledge of their interests have been benefited. Through the columns of the farm journals millions have been and can be reached. Much has been done but greater things can be accomplished in breed extension if all organizations will do their work in cooperating in a substantial manner with the press in general and the farm journals in particular.

THE PRACTICAL SIDE OF FARM LIFE.

(By Mrs. C. L. Herren. Read at the Page County Farmers' Institute, Clarinda, Iowa, Dec. 11, 1914.)

In one of his early addresses at the close of the late presidential campaign, President Wilson said: "The delusion may exist in some that the arts, the sciences, wealth are the keystones of human happiness, so far as social and political government are concerned. This is not true. The keystone, the enduring or the crumbling center of support is the human home."

During the last twenty-five years this nation has been undergoing a terrific economic change. Wealth has trebled, resources have expanded like an Arabian Night's dream, and what influences the American nation, in just the same proportion is the American home affected.

The home is the center of all government. What is done within its walls makes or unmakes government. No difference whether the home be a sod shanty on the prairie or a mansion in the city, the influence is the same.

In all lyric poetry which deals with the tender side of home life, there is none more beautiful than Burns' "Cotter's Saturday Night." In the simple lines the Scotch poet has expressed all that tends to unite the father and mother, which brings the child into unity with the parents, which puts a song of joy into the whistle of a winter's wind.

Let us look now to the making of better homes; to the practical side. The word "practical" meaning "capable of being turned to use." Let us consider the greatest needs in farm life.

The American Branch of the International Congress of Farm Women held its fourth annual meeting in Wichita, Kansas, last October. The keynote of the congress was the speech of Dr. Carver, head of the Rural Organization Service Bureau of Washington. He declared that the great needs of farm life today are better schools, more thorough provision for sanitation, better opportunity for recreation, a wider effort for beautiful surroundings, and last of all, rural organization. Dr. Carver declared that the first four needs could be answered by accomplishing the last.

Farming is just as much a business as merchandising, and farm operations must be carried on in a business-like way. Every department of farm work corresponds to the various departments of a larger mercantile business and the work of each must be carried on systematically. This includes the farm home and the management of the household. Housekeeping is a profession. There is a sentimental and personal and a business side. Because women have wanted their work to be personal it has been drudgery to a great many. Isn't it about time that we put housekeeping on a basis of business efficiency?

The installation of up-to-date machinery about the farm almost invariably pays from a dollar and cents standpoint entirely, aside from the larger consideration of making farm life more convenient and congenial.

What is a labor saving device? It is really a labor conserving device. That is, saving labor in one thing to be expended in something else. It is any given piece of machinery by which any task may be as well performed, but in less time and with less expense of vitality. Unless it conforms to these conditions it is merely a luxury.

The power washing machine probably should receive the first place. When we consider that by the investment of twenty-five dollars the machine may be installed. Including the interest on the investment and the depreciation in value of the machine, the cost of the washing is figured to be about twenty-five cents. What laundry or what woman could you hire for that sum?

The oil stove is largely taking the place of the wood or the coal stove during the summer season. The cost is little more and when compared with the comfort of working in a room with a stove that does not give off ninety per cent of its heat, the cost is to be disregarded.

Have you watched a woman iron, counting the steps to and from the ironing board for a hot iron, measured the distance and figured the number of rods traveled in doing that family ironing? There is no stronger argument in favor of an electric, gasoline or charcoal iron than this problem in arithmetic.

A bread mixer saves that tired back many an ache. The fireless cooker has not found its rightful way into the farm kitchen. It is a fuel saver as well as a saver of energy and care on the part of the housekeeper.

There are many small utensils suited to the use of individuals which represent a small outlay of money, but mean a great amount of labor, time and energy saved.

That there be no useless time or energy consumed the kitchen equipment must be properly arranged. To have the dishpan six feet from the table where the dishes are washed, when it could hang over the table or under it, seems a small matter to be considered. But the dishes are to be washed three times a day, the pan must cause an unnecessary twelve feet each time. Would you believe that you have walked uselessly two and a half miles during the year?

Labor saving devices and a convenient kitchen are good, but lack of water and sewerage systems is the thing which taxes farm women most of all. It is by no means least in importance, but it is the thing usually left to the last. It is regarded as a luxury and when the farm is fitted up with the latest equipment then some thought is given to putting in the water system.

Sanitation is the subject that is of the greatest importance in the welfare of the home. During the warm season this subject is not neglected, but when the cold days come, we close our homes to the pure fresh air. Open the windows—sleep with plenty of the life-giving oxygen in the room.

Do you know that it is estimated that one-seventh of all mankind die of tuberculosis? The great prevention as well as cure of this disease is pure air, day and night.

Much is said of the practical value of co-operation. There is one line in which we may all have a part, namely, co-operation of the home and school. When we send our children from the home to the care of the teacher, do we give her the sympathy and encouragement in our power? She has her difficult problems to solve as well as the homekeeper. We know how necessary sympathy is to our happiness and success. Then pass it on to the country teacher, who strives to train our children.

Only one person in every thousand in Denmark is unable to read and write compared with seven out of every thousand in the United States. The secret of Denmark's high place lies in the influence which the teacher has upon the people. The teacher's high social rank makes her leader in church and state. She is pensioned for disability or age.

Next to the school in the molding of character is the reading matter in the home. The traveling library may be brought to all. Thirty-five states are now undertaking library extension work and twenty-nine states maintain traveling libraries.

Much is said of the drudgery of farm life. The basis of drudgery is monotony. The reason housework is classed as drudgery is because it becomes so everlastingly monotonous. It isn't the work itself that grinds. It is the thought of it day after day, week after week, stretching on through a lifetime.

The housekeeper who allows herself to get into a rut is in grave danger. Neglect some of the work. There will be dishes to wash, beds to make and pies to bake a thousand years from now, but we have only one trip through this world. Make the best of it. Be fair to your family and to yourself. And here comes the practical side of our country club work. We believe that we gain in efficiency in home work by taking an afternoon every week or two, meeting one another and thereby receive an uplift, physically, mentally and spiritually. Work goes easier when the mind and body are rested.

Have you ever, dear home-maker, looked about your simple home and thought what a commonplace life you lead? Such thoughts come into the minds of many women as they go through the common round that makes up the work of a home.

While all may not reach fame, all may win love and respect by blooming in whatever soil they may be planted, cheerfully putting forth all their simple beauty as do our humble garden flowers.

"A commonplace life we say and we sigh;
But why should we sigh as we say?
The commonplace sun in the commonplace sky
Makes up the commonplace day.
The moon and the stars are commonplace things,
And the flower that blooms and the bird that sings.
But dark were the world and sad our lot
If the flowers failed and the sun shone not:
And God who studies each separate soul,
Of the commonplace lives makes His beautiful whole."

FARMERS' RECREATIONS.

(Paper Read by D. N. McGrew, at Mills County Farmers' Institute.)

When I first began working on this subject I hardly knew whether to consider recreations entirely as amusements or something to change the occupation. After thinking about the subject, I decided that recreations might mean anything which took the mind off the regular order of work.

The next question is, do farmers need recreation? (Now I am going to consider the whole farm family when I speak of the farmer.) Most any person will admit that a change of occupation will so rest the mind and body that one is able to accomplish enough more in less time to more than make up for the time taken. Some people will say the farmer is a busy person; he has no time for a camping trip, the chautauqua or county fair. Now it has been shown that the person who takes time for a fishing trip, lecture course, etc., is as well up with his work as the one who works all the time.

The city business man takes a vacation. Why? Because he feels that he will be able to do enough more or manage his business enough better, to make it worth while.

Why did Henry Ford increase his employes' wages and shorten the working hours? Just because he believed the men would do more and do it enough better to make it pay returns. Those of you who have been interested in his plan know that it has worked out.

Now the question is, if the farmer takes a little more time to think of other things, will he not be able to plan his work to better ad-advantage and in the end accomplish more?

Now, don't misunderstand me, and pick out some farmer who is seldom found at home and think that I mean he should take more recreation. There are about three classes of farmers. One, the extreme in which the people practically stay at home from the beginning of the year until the end, seldom going any place except to town for supplies. They have no interest in public affairs and are interested in their work only as a means of livelihood. This is not an exaggerated case, there are numbers of just such families. The condition is usually worse for the women, as they have nothing whatever to interest them. The men get away from home more by changing work with the neighbors and are usually the ones to go to town. I don't mean that they will naturally be more sociable than the women, but that the women have fewer opportunities to get away from home and who can blame them for losing interest in things outside the home?

The second class is the farm folks who do take time to enjoy public affairs and still attend to their home duties.

The third class and the class as much in the extreme as the first mentioned are the farmers who live in the country and stay in town. Nothing happens in the way of amusements but what they are present and on ordinary days can usually be found in town at the croquet grounds or some other favorite loafing place, either talking about the merits of their automobiles, else how unlucky they are in everything they undertake. The recreation I would recommend for this class would be, stay at home and farm a little.

It is in this class that the men will have to take most all the blame for when you notice a farmer that stays in town you usually observe that his wife stays or has to say at home.

Now this may not always be. When we get equal suffrage we may see the women at some favorite spot in town talking not about what a good hill climber their auto is, but about how handy their fireless cooker is and how they can put the food in it in the morning and rush home a few minutes before noon or supper time and soon prepare a piping hot meal for the hired man, while their husband is putting another can of gasoline in the automobile.

I was reading recently an article in a farm paper about farmers working so hard while young that they were not able to relax their efforts when they became old, thus making old age a dissatisfied existence, instead of a contented time of life, deserved by honest effort.

Statistics show that the average life of a retired farmer is five years. This means that some farm men and women simply work themselves to death. They work early and late in order to lay up something for old age, but work so hard that when old age comes their health is broken and the habits formed during the years of hard work are so dominant that they are dissatisfied with idleness and not being able to work they become an easy prey for ailments and are anxious to be through with this world.

Now, which is better? Shall farmers work so hard trying to prepare for retirement and old age that they will not be able to enjoy either when that time comes, or shall they have their pleasures along with the work. It may take a little longer to acquire a certain amount of property that all people should have to rightfully enjoy old age, but think of the years of living instead of drudgery that they will have, and if it does take a little longer to acquire this, won't the period classed as "old age" be shortened, due to the physical strength being better preserved?

Now the question comes, what shall be the recreations for the farmer? For one thing I think that every family should get away from the farm for a week or more every year. I don't mean camp at the chautauqua and go home every day to see how things are or else telephone there and tell the man in charge to commence cutting the hay or something like that. I mean, get away from the farm for that time and stay away. Get someone to look after the chores and give him directions to act as he thinks best, and if the pigs get into the potato patch let the chore man do the worrying—don't, on the peril of your vacation, let him tell you about it. Then, after a family has had a week or so of rest with no farm matters on their mind they will be able to go home and if the hogs are out or the hens have commenced to eat eggs, say "Never mind, the vacation was worth it."

The vacation need not be expensive. Eight or ten dollars would get someone to do the chores and a tent could be rented at a reasonable price.

The chautauqua, fairs, etc., are nice to attend, but what farm man or woman is there, who, when the chautauqua session is lasting longer than usual, will not be thinking, it's time those hogs were watered or the bread box is about empty and I ought to be at home now getting some of the work done so I can bake again before the next afternoon session.

So much for an entire change for recreation. What I want to talk about now is the recreation that will last the whole year, can be enjoyed by the whole family, will help the community socially and will mean better farmers and housekeepers.

This recreation is called "The Farmer's Club." They will do all that is claimed for them, and are practical. They are successful in some communities; why not all?

These clubs may be entirely for social purposes, but I think it would be better if a program pertaining partly to agriculture and home economics were given at every meeting. I have read considerable about such clubs in Harrison county. Near Missouri Valley there are several. These farmers and their families meet every two weeks for an all-day session. The meetings may be further apart, varying perhaps at different seasons of the year. The meetings are held at the different members' homes and always mean a dinner, a program and a social good time.

While this form of recreation is not free from the farm problems, I believe it is the form that will appeal to the average farmer. A better or a newer way to do things is always a change or a recreation and the farmers meeting at these clubs will always discuss the best methods in agriculture and home economics. Every person usually excels in some particular line, so a whole neighborhood meeting together is sure to mean improvement. As for recreation, did you ever see a person who had seen or heard of a newer or better way to do anything, that lacked enthusiasm?

Now the thought I would like to leave is, let each community have its organization for social and educational purposes. If we do we will find that our neighbors are good people after all and are just as capable as we. There will not be any more families living on the same section that have never been at each other's homes. I really believe that people were more sociable fifty years ago when the whole family went visiting in the lumber wagon, than they are now when we have buggies and autos to go in. The trouble now with us is, we are too independent and self-centered. If we would co-operate a little more we could build up a community in which land would seldom be for sale, and if it were, would be the place where those hunting new homes would like to locate.

THE OPPORTUNITIES OF THE RURAL CHURCH.

(An Address Given by the Rev. James W. Johnson, Leon, Ia., Before the Decatur County Farmers' Institute.)

Whatever may be said as to the reasons for a "rundown" church, it can be truly said that one of the reasons is that the community finds so little use for it. People would find more use for it if it served them in their everyday life.

The rural church, as a rule, is locked up six days in the week and when it is open it is when the everyday affairs are shut up, so the church and everyday life seldom meet.

This is an awful error because sooner or later it means the end of Miss Church's career in that community. Farmers are the busiest people on earth, as a class, and they cannot be expected to give time to something that will not return some sort of profit, somewhere.

Some wise man said once, "The way to a man's heart is through his stomach." That's one way. There are a legion of other ways. But no truer or more justifiable way can be found than through helpfulness. So in case the church does the farmer a good turn, you will find him promptly recognizing the service and reciprocating.

Our Master said, "I am among you as one that serves," "and the common people heard him gladly." It will require a profound logic to prove that a serving church will not be loved by those same common folks.

Remember, man is soul, mind and body. But remember, too, that the church can administer to the mind and body, just as well as to the soul, and in proportion as she does that will she approach the maximum of her possibility. The fact is the rural church has today discovered that she can do this work and it is the open day of her new and best day.

The church can be an educational center for the whole community. The city has her clubs, her lyceum courses, entertainments. The country has sporadically and spasmodically a taste of such things, but as a rule the rural folks must go to the city for such or go without them and generally they go without them. This need not be, for show the country people the possibility of such pleasures among themselves and they prefer to enjoy them at home rather than go to town.

In a certain rural school where old-time ways and old-time subjects only were taught, a vote was taken among the boys as to whether they would prefer to stay on the farm or go to town. Nine-tenths of them wanted to leave. Afterwards a course of agriculture and kindred subjects was introduced and another vote was taken. This time nine-tenths voted to remain on the farm. They saw what the country could do.

One of our country churches introduced a lyceum course of several numbers, each coming on a moonlight evening, and it was spiced a bit by one or two home talent numbers. It was a great treat. And probably for the first time in its history the old house rang with laughter and applause. But who dares assert that the God of laughing children was displeased to see His children enjoying themselves?

Most of us know of the plowing contests that some Illinois churches put on, where the ladies prepare good meals while the men prepare a most enjoyable appetite by trying out new and old style plows. A church in a plow contest! Sure! A church put it on, for farmers plow, and why shouldn't a church gather men around a plow as well as anywhere if she can get them there and increase their efficiency as tillers of the every-day Eden?

Some others who believe that if it is a good thing to raise hogs it cannot be a sin to listen to instructive lectures on hog cholera, its cure, prevention, etc. Still others invite physicians to give lectures on hygiene, sanitation, care of the teeth, etc. And why not? Churches teach that it is a sin to misuse the body and slow suicide to do so. Then why not godly to learn how to prevent suicide. So the church finds herself again.

Of course the schools can and do teach much of this, but they by no means can reach all who need it. The whole community needs it and when the church serves that community in these ways it will have in turn a response that will thrill and build her most wondrously.

The biggest error on earth respecting the church is to believe that she has no chance at everyday life, or rather nothing she can contribute to such life. The church that cannot contribute to everyday life can hardly be thought worthy of a place in any day of your life.

But probably a greater possibility for the rural church is in her opportunity to provide, with the church as a center, a dependable interest in good amusements and recreations.

Some other seer said, "Show me a nation's songs and I'll tell you her character." Maybe. But you can say without fear of ever being defeated in your argument, "As a people play so they are."

Who is there in the country to provide amusements and recreation for the young? Nobody. Who is best adapted to provide it? Probably nobody so far, but the church has the biggest opportunity of anybody.

It might savor of heresy and degeneracy to some old standpat fathers to ask for a gymnasium in the new church basement, but to the young it sounds like sense. And when, after seeing a house filled with old and young, they ask "Why," the answer is, "The church has helped these young people, now they help the church."

For remember, if the church frowns on everything but the Bible and the hymnal, most likely the young people will frown on even these. What the country and country church needs is not to know how to frown but to serve her young people and help them to smile.

A boy gets a lot of exercise plowing corn, but a boy is three-fourths dirt and one-fourth noise till he is ten or twelve years old, then he divides the fractions so that part is fun. And you can't eliminate any fraction and retain him as a normal boy. So the church has a wonderful opportunity to provide proper amusements and recreation for her young.

All work and no play "unmakes" the boy. We used to keep slaves till they were sold or dead. Now we keep a boy tied till he is twenty-one and then he gets such a start in freedom he often makes it into license and wrecks himself.

When I was a boy we were given our Saturday afternoons and we met to play ball. It helped in two ways, better boys, and on Sunday no one wanted to dissipate, we had had our fun. The church was gainer.

Young folks must play; that is as necessary as breath if we want them healthy and robust socially and spiritually. Some country churches put a few dollars into picture machines and other paraphernalia to entertain their boys and girls under proper scrutiny. They think it's better to spend some cents (sense, too) keeping them at home, rather than dollars to bring them back home after they have gone, and too often for good. They tell the churches and old people, "I am going where there is something going on."

Well, they will find something, all right, but as a rule their new-found pleasures are closely related to crookedness and shade. Age-blind guides! Look at your shortsighted business! Save dollars and damn your sons and daughters!

Churches, spend a few dollars and a few acres in fixing up ball grounds, gymnasiums, skating and swimming ponds, picnic parks—anything that in your open-eyed vision for growing young people you can see. Spend, and it will come back to you a hundred fold.

It has been true too much that the church is the biggest institution on earth for manufacturing "Don'ts." But "don't" never did anything but stop.

What will you have the young people—and old—do?

Then do it with thy might.

Serve or sink.

HOW ONE GRITTY WOMAN RAISED POULTRY WITH ORDINARY BUILDINGS.

(Paper Read by Mrs. Geo. D. Jones, Cascade, Iowa, at the Dubuque County Institute.)

As I have been very successful in the poultry business, I have been asked to tell my way of handling it, that you may profit from my experience. In order to be successful, one must have in store patience, good sense, energy to work hard and long and stick-to-it-iveness. With these qualities in hand, a few chickens and some feed, you are ready for the work.

The strains of chickens I keep are those I think the best layers. They are the White Rock, Barred Rock, White Leghorn, Brown Leghorn, Rhode Island Red and a few Buff Orpingtons. I get only the pure breeds. The food I use is the grains the farm produces. One thing I am very careful to give them, is all the fresh water and oyster shell they need. Sometimes I have been without the shells and in two or three days it will show a decrease in eggs. The eggs I gather twice a day during the spring and summer months. In getting eggs ready for the market I pack only those of uniform size. With the exception of rainy days I pack only the clean eggs. During the broody season I shut in the broody hens every night to insure fresh eggs for the market. And always when at home I gather the eggs myself. The way to break a broody hen of setting I have heard from neighbors is this: "Souse her in a pail of water and that will frighten the broodiness out of her. Or shut her up and neither feed nor water her until she ceases to cluck." I hardly considered either treatment humane so I did not try them. I shut them away from the other chickens and give them all the corn, oats, shell, grass and water they want and in a very short time they begin to lay again.

In choosing broody hens for setting, I choose the heavier ones. The little Leghorns are too flighty for best results. I have used an incubator several times, but do not like to work with it, though I had good success. For hatching purpose I select the medium sized, nice-shaped, hard shelled eggs. I have used the large eggs with good results. Once I tried an extra large egg. I allowed it a couple of days extra for hatching, then became impatient and broke it and found two live chickens. I use only fresh eggs for setting. Still, I allow them twenty-four hours to cool; until the animal heat is gone. I can prove from experience it is the better way. I often hear it said that from the hen that steals her nest we get the best results. But you will notice that there is always left at least one egg not hatched, the egg that was not cooled. While I have set dozens of hens that have hatched every egg.

The broody hens I choose for setting I leave on their nests until I have from seventeen to twenty. Then I have a place ready with nests in nail kegs—the kegs I purchase from a hardware dealer—and set each hen on one egg for a day or two until I can depend on her. I keep the kegs covered with boards and let the hen out to feed once a day. In the early spring I put thirteen eggs under each hen, but as the weather gets warmer I let the hens have fifteen eggs. When the setting hens have been troubled with mites I put a layer of dog fennel on the straw in the nests and the mites either die or leave. I did try to put two lots of hens in one place, but during the days of hatching of the first setting the second lot were so disturbed by the peeps of the little chicks that they became restless and spoiled their eggs. As the little chicks hatch I take them to the house. Here I have the advantage over most people in having a cat that will care for wee chicks and turkeys and keep them content. I then give the hens about seventeen chicks apiece and keep them shut in a couple of days so they will learn their place of roosting. For at least two days I do not feed the young chick. When I begin I give them dry bread, oatmeal and chickfeed. The first week they get only sweet milk to drink. In two or three weeks I begin feeding corn meal and chickfeed. I never give them the raw meal, but always bake it thoroughly. It makes lots of work but it pays well. Now, I come to the part of the poultry business I like so well. The work with the turkeys. Almost without exception I hear the people say, "The little turkeys are so hard to raise." I am glad to be able to differ with them. I do not remember having lost any with the baby cholera, the trouble turkey raisers dread so much.

I keep the big bronze as pure in stock as I am able to get. In selecting the hens I keep the very largest.

Some have trouble in having the hens wander off to make their nests. After the snow melts and the turkeys begin to leave the barns and come around the house I go out every morning and feed them a little bread. They soon begin to look for it and become so tame they will eat from my hand. Those hens will not wander far from the home place, you may be sure. Like the little chick, the young turkey is not given anything to eat for a couple of days. The feed consists of chopped hard-boiled eggs and onions, using both top and bulb, with a sprinkle of pepper, though I do not think the latter necessary. I use the sweet, white pepper for turkeys and chickens. They get only sweet milk to drink for a couple of weeks and when I begin to let them have water I give them only a little at first. After a while I mix a little dry bread and oatmeal with the egg with always plenty of onion. The curd from sour milk makes fine feed. They are fed regularly every other hour for two weeks. The first two weeks I keep them in a pen made of boards, with a large box in one end for the hen to roost. The pen is only a board or two high, so the hen can be outside. I have it in a grassy place. When I first let the turkeys out I watch that they do not get too far away and always get them home at night. In a few days the hen learns to come home to roost. I then feed them about five times a day. It means some hours of walking, but regular feeding means healthy turkeys. Their first feed all summer long is about four o'clock in the morning. About harvest time they get only breakfast and supper. Even in the fall, when the corn is in the field, I feed them at night, as it makes them eager to come home. When I see a heavy storm come up I bring them home for shelter. When they do get soaked I begin doctoring them at once as I have found in dealing with turkeys "an ounce of prevention is worth a pound of cure." I take bread, quantity regulated by number and size of turkeys, using as many as three loaves of bread. For that amount of bread I take from two to three teaspoons of balsam mixed in the quantity of milk needed to moisten the bread, with a generous sprinkling of pepper. In a little while the little fellows are as spry as ever. The bread has satisfied hunger, the pepper has warmed them and the balsam has prevented bowel trouble. I use several bottles of the balsam during the summer for chickens and turkeys and like it better than anything I have found. When they begin to eat corn they need plenty of shells. Shelter from the cold fall rains, and not too much green corn will keep them healthy. For cholera in grown chickens or turkeys I have found fresh lime as good as any thing. Dissolve fresh lime, the size of a walnut, to ten quarts of water. Give the chickens no other water at the same time.

CORN IMPROVEMENT BY SELECTION.

Specialists will breed corn in future—Certain clearly defined principles must be kept in mind if permanent improvement is to result.—

By A. A. Burger in The Iowa Homestead.

The improvement of our corn depends to a very large extent upon the efficiency of our selection. And in the selection of our corn we must take into consideration both the factor of field selection and the selection in the ear. The factor of field selection will perhaps be greatest in determining the yield and maturity, while the selection of individual ears will be greatest in determining the type. Both methods of selection, however, are important, and to attain the highest possible success in the breeding or growing of corn it will be necessary to give each the attention it deserves. Good corn like good stock tends to reproduce itself, and the reasons that make necessary the selection of stock apply equally well to the selection of corn, and, in fact, to all the crops grown on the farm. We have already done a great deal more toward improving our varieties of corn than toward improving our varieties of small grain. But every farmer cannot become a corn breeder, any more than every farmer can become a pure-bred stock breeder. However, there is no excuse in either case for the breeding or production of scrubs.

The time is coming when we shall have corn breeders in every locality from whom we can buy our pure-bred seed corn just as we now buy pure-bred cattle or other live stock from breeders who are making a specialty of that particular business. Every man could not succeed in the production of pure-bred stock or pedigreed corn and grain, nor would such a procedure be profitable. The average farmer is content to leave the production of the very best to specialists in the business. The specialist realizes this now more than ever before, and he realizes that there is a need for more systematic improvement. The man who has the knack of selecting corn and who can settle himself to the task of actually doing something in this line will make a success of it, and he will be well repaid for his work. With as much improvement as we have already made, and as much good corn as we already have, we still have need for thousands of bushels of seed corn which should be distributed throughout the country.

In the selection of corn it is necessary that we know what to select. Perhaps the first thing which would attract our attention is the general appearance of the ear, or, commonly speaking, its size and shape. The size must vary with the variety, with the locality and the particular farm upon which it is grown. The largest ear is not always the best. This will be true not only as regards the type, but also as regards production, and especially regarding maturity. Ears slightly above the medium in size for any locality will come nearer producing the highest yield than the very largest ears for that locality. This must be evident from the fact that the largest corn of any locality does not always properly mature. In this connection it will be well for us to remember that one of the greatest mistakes that we have made in selecting our corn for the field and selecting our corn for the show has been the selection of a type too large for the locality in which it is grown. The farmer likes to see the large ear because it is that kind that fills up the wagon and in his judgment the kind that produces the yield, and the judge likes to place the ribbon upon such a sample because he has more corn. We will need to give special heed to this in the northern part of the corn belt. The careful corn grower will select the largest ear of corn that he is certain will mature in his locality every year.

In shape the ear should be rather cylindrical, slightly tapering from butt to tip. Experiments indicate that the highest-producing ears of corn are those which conform to this type. The ears should carry out full and strong in the middle, and should have their greatest circumference about one-third the distance from the butt to the tip. The circumference here is often called constitution, and, while we like to see ears which are full and strong in this respect, this is not always a characteristic of corn which is strong. If this were true, short, stubby ears with a large circumference would be the strongest producers. Long ears are objectionable because they are generally weak in the center, although they might not necessarily be weak in constitution. It has been found by repeated experiments that ears which are slightly above the average in length are the heaviest yielders. However, extremely long ears usually have poor butts and tips, shallow kernels, and hence a low per cent of grain to the ear. Short, thick ears, on the other hand, are objectionable not only because they are poor in yielding qualities, but because they lack quality, and are late maturing and hence inclined to be weak in vitality.

The butt of the ear should be well filled out, and not club shaped nor too small, and should have a shank of medium size. Large open butts with large shanks indicate lack of breeding and late maturing. Such ears are hard to break off in husking. Small butts, very closely filled with irregular kernels and having a small, weak shank, show a lack of strength and frequently blow off the stalk before maturity. Corn of this type will not be the heaviest producer. In medium varieties of corn, the shank should be about three-fourths of an inch in diameter. The cavity in the butt of the ear should be slightly larger. This should be smooth and should blend nicely into the kernels, which should be of uniform shape and arranged in straight rows from the butt to the tip of the ear. The tip of the ear should be well filled with deep, well-dented kernels and the rows should run well out on the end. It is not at all necessary that the tip should be completely covered. In fact, this is a "fancy" point and is usually correlated with short, stubby, late-maturing ears. We find that this characteristic is developed at the expense of other desirable characteristics in our corn. Because such ears have a nice appearance it is not infrequent to find very inferior ears which are filled over the tips at our corn shows. Of course, if we can find corn having every characteristic which we desire and at the same time well filled at the tip, such corn will be given preference. But it must be remembered that the actual amount of corn which an ear carries will not be determined by the filling of the ear over the tip. Here again, experiments have shown that the highest-yielding ears of corn were those which were rather deficient in the filling of the butt and tip, and that between these two characteristics the filling of the tip was the less important.

The ear should conform to the breed type of the variety. In yellow corn we will look for a red cob; in white corn for a white cob. The kernels as well as the cob should have a bright, uniform color, characteristic of the variety. Foreign color in the kernels, as, for example, white or red in a sample of yellow or yellow in a sample of white, indicates either a mixture or a lack of breeding. The kernels should be uniform in size, shape and depth, and should be arranged regularly in well-defined rows from the butt to the tip. In shape, color, dent, etc., they must conform to the variety type. The size or width of the kernel determines, to a large extent, its character and strength. It is to the ear of corn what the size of bone is to the animal. A small weak-boned animal shows weakness in its makeup. And so corn, however well it may be improved as to its type, may be strong or weak as indicated by the size of the kernel. Corn grown in the northern latitudes generally has a wider kernel and fewer rows than that in the southern part of the corn belt. This must be true, for width of kernel which gives strength is more necessary. And in the breeding of all our strains of corn, as in the breeding of our animals, it will be necessary for us to keep away from the "fine-boned, shoe-pegged" type of ear. The type that the judge selects should be the type that will do the best in the field.

Type is also indicated by the shape and dent of the kernel. The character of the dent varies from the smooth, hard, flinty corn to the soft, chaffy, beaked varieties. The dent should be uniform over all parts of the ear and it should be typical of the variety or of the ideal toward which we are selecting. There is a tendency in dented varieties of corn toward a smoothness at the tip. This characteristic should be avoided. It is one of the first indications of the lack of breeding and proper selection. Most of the corn breeders are now selecting a rather medium dent and are discarding the extremes of both the smooth and beaked types. This practice conforms to the results which have been secured in experimental work and which indicates that such corn will produce the largest yields.

The most important single factor to be considered in selecting corn is vitality. It is the greatest factor for our low yield of corn. Ears which will not germinate have no place in a show sample, much less in the corn which has been saved for planting purposes. Dead ears may sometimes be detected by the "cheesy" appearance of the embryo. The healthy germ should be large, smooth and bright—not discolored, blistered, wrinkled or roughened. When broken apart it should appear fresh and oily and the outside of the kernel should have a bright, cheerful appearance. The germ should be of a rather creamy color and rather brittle, although not dry or wrinkled. Chaffiness, a white, starchy condition (usually noticed at the crown of the kernel), the adherence of a part of the chaff of the cob to the end of the kernel, or the adherence of the tip cap of the kernel to the cob exposing the germ are all indications of weak vitality. These tests, however, are merely external and they serve merely as a guide for "guesswork." It is difficult for us to determine whether kernels are weak or strong, nor can we tell in plant life where life begins or ends. The only reliable test is the germination box. If every ear of corn to be planted next spring were tested this winter, it would be the most profitable improvement that we could make.

Corn should show a reasonably high-shelling percentage—that is, 85 to 87 per cent of corn to cob. The cob should be of medium size. The cob, as the kernel itself, bears the same relation to the ear of corn that the bone does to the animal. It may be too fine or too coarse. A coarse cob indicates poor quality, generally a low-shelling percentage, and frequently poor type. Such corn usually drys out slowly and hence it is usually poor in vitality because subject to frost. Small, undersized cobs may contain long, loose kernels with narrow contracted germs, poor in feeding value and low in vitality. A medium sized cob with a kernel slightly tapering toward the tip and of medium depth is to be preferred. Extreme depth is not associated with high-shelling corn. On the other hand, extreme depth usually indicates starchiness, late maturity and low yield. There must be solidity and compactness in our corn, small space between the kernels at the surface and no space at the cob.

Finally in the selection of corn, let us bear in mind that it is not merely a selection for show purpose, but that we are selecting corn with the ultimate aim of establishing and improving varieties for the highest yield. A careful test on any farm will convince the most skeptical that the proper selection, grading and testing of seed corn will pay.

THE CLOVER AND LIME PROBLEM.

WALLACES' FARMER.

Many of the soils of the southern half of the corn belt and some of those of the northern half have become acid, and in order to grow good red clover or alfalfa, require the application of from one-half a ton to three tons of limestone per acre. In many sections of our territory it is possible to spread on the limestone at a cost per acre of not much more than $1 or $1.50, but in other sections it is next to impossible to put on lime with any economy. If our farmers were only awake to the situation they would realize that at the present time we have a lime problem in the corn belt.

Beginning with the season of 1909, and omitting that of 1912, most of the corn belt has suffered more or less from drouth. To have so many dry summers in succession is unusual. Year after year our farmers have lost their clover seed, and the next year they have seeded more in the hope that the season would be normal. Probably millions of dollars have been lost on account of our inability to secure a good stand of clover during the last five years. Of course, a number of men have been successful. In some cases this has been because their localities have been wetter than the rest of the corn belt. In other cases it is because the soil is sweet, well stocked with humus, and handled just right.

A north central Illinois correspondent presents a typical problem as follows:

"I wish to know how to get better results in seeding down land. I own 120 acres, which is in a good part of the corn belt. This land is gently rolling, the good and poor land being in irregular patches, caused by draws and ravines making some parts steeper than others. There are about twenty acres of bottom and about sixty of good upland, besides forty acres of hillside steep enough to sheet wash during hard rains. I bought this land five years ago. For seven years previously it had been rented to nearby neighbors, no one being on the premises, and consequently the place was entirely without live stock. There was also no grass, and the hillside land had become too thin to raise more than twenty or twenty-five bushels of grain per acre. The bottom land was good, and the level upland was fair. I fenced the place in twenty-acre fields and planned the following rotation: Sixty acres were always to be in grass, forty acres in pasture, twenty acres in meadow, forty acres in corn, and twenty acres in oats in which grass seed was to be sown each year. This would give me twenty acres of sod corn, twenty acres of second-year corn, and twenty acres of oats. I have noticed that nearby farmers have followed this rotation with very good results. They have been able to keep enough live stock to eat all the roughage and most of the grain also. In 1910, I sowed twenty acres to red clover and timothy. It came up fairly well, but it was so dry that year in June that all but about five acres died. I still have this five acres in meadow, but the plants are short and slender, and it usually makes just about one load of hay per acre. The year 1910 was a poor one for grass in this locality, and many fields failed. In 1911, I sowed twenty acres of red clover and timothy, but the season was very hot and dry, and all plants were dead by July 1st. The seeding in this locality was an entire failure even on bottom land. In 1912, I seeded twenty-five acres of timothy and alsike clover. This was a good season for grass, and I got a good stand except on a thin slope. The alsike is now gone, but the timothy remains good. The season of 1912 was generally favorable for getting a grass stand in this country. In 1913 I seeded ten acres of red and alsike clover and timothy on fall plowing. This proved an entire failure. I seeded twenty acres of the same mixture in corn stalks, with oats, and secured a poor stand on the hills and a fairly good stand of timothy and alsike on the level spots. The red clover died during the summer. The season of 1913 was hot and dry, but a generally fair stand of clover was obtained in this locality. In 1914, I sowed twenty acres to red clover, alsike clover and timothy. The red clover is dead, the alsike is going, and the timothy is holding on. The season has been hot and dry. You see that I have had but one satisfactory stand in five years, and that contained no red clover. As far as I am able to judge, the soil is acid. The litmus paper test indicates it at any rate. Sorrel and moss are found nearly everywhere on the hills. I plowed up a five year pasture last spring that had grown little but foxtail since it was seeded down. The corn on the level parts is very rank and thrifty, showing that the soil is better suited to cereals than to the grasses. I sowed a small patch to soy beans and a patch of sweet clover last spring, and both look fairly well so far. It seems that nearly every year such spells of hot, dry weather occur that the young grass is endangered even on the best of soils, and is usually killed out entirely on soils at all unsuited to grass. This has become a matter of grave concern to all. It is impossible to make enough manure to solve the problem. I am nine miles from the railroad, and the application of lime and phosphate would be a big undertaking. Even if I knew it would be successful, I would have to proceed slowly. If you know of any pasture grass that would be better than what I have, or some legume that is grown and plowed under, I would be very glad to hear from you. The income from the pasture and hay land except as a fertilizer is very small anyway, and I could get along without it for a time if I could keep the land in good shape for grain."

Dry weather and acid soil have got the best of our correspondent's clover. Of course he can do nothing about the weather. That will no doubt come back to normal in the near future. So far as we are able to determine from the weather records, dry seasons may continue for three or four years in succession, but sooner or later they seem always to have been followed by seasons moister than usual. Just when the moist seasons will come, we can not say, but it would seem as though they were about due.

So far as the acid soil is concerned, our correspondent can do a lot of thinking. There are two ways of approaching the problem. He can sweeten the soil or he can grow crops that will stand acid conditions. The general recommendation is to sweeten the soil by applying from one to three tons of ground limestone per acre. We do not know just how far our correspondent would have to go to get the ground limestone, but probably not so very far, for there are a number of quarries in Illinois that have limestone for sale. A list of these quarries can be had from the Illinois experiment station, at Urbana. But with his long haul, the chances are that an acre application of limestone would cost him $4, and the application should be repeated once every four years. We suspect that this application would pay, but can not be absolutely certain. It should be worth while, however, for our correspondent to experiment with a carload of limestone. There is also a slight possibility that this land is lacking in phosphorus. Some soils refuse to grow good clover because of being poor in phosphorus. To determine this point, our correspondent should experiment with rock phosphate, applying it at the rate of half a ton per acre on two or three acres, or with acid phosphate, applying it at the rate of half a ton per acre on half an acre or so.

Corn does first rate on acid soil; so do oats, potatoes, millet, buckwheat, rye and red-top. Strawberries, raspberries and blackberries do better on acid soil than on sweet soil. It is well known that clover and alfalfa refuse to grow well on acid soil, but there are other legumes that get along nicely. Cowpeas, soy beans, hairy vetch and crimson clover make a nice growth on acid soil. Since our correspondent is so far from the railroad, it may be that it would be better for him to experiment with crops tolerant to acid conditions than to buy limestone. To furnish nitrogen and humus to enrich his soils, he has his choice between cowpeas, soy beans, hairy vetch and crimson clover. Crimson clover and hairy vetch have the same habits, both being seeded in the late summer. They become established before winter, and make a very heavy growth in April and early May, at which time they may be plowed under for corn. Crimson clover is a very tender plant, and generally winter kills north of southern Illinois. Hairy vetch is quite hardy over the entire corn belt, but, unfortunately, the seed is so high in price and so uncertain in quality that most of our readers who have tried it have become disgusted with the crop. That there are wonderful possibilities in this crop as an enricher of acid soil has been demonstrated by an Indiana farmer who, by sowing it in the late summer and plowing it under the following May, has been able to double his corn crop. It is a good plan to seed vetch with rye, using twenty or thirty pounds of vetch seed per acre, and about three pecks of rye. Vetch may fail the first year it is tried, but the second time it is seeded, it generally grows splendidly. We suspect that there are possibilities in growing vetch seed in the corn belt, although no one seems to have tried it as yet.

Cowpeas and soy beans are both seeded in June or early July. They may be broadcasted at the rate of six pecks per acre, or drilled in at the rate of three or four pecks. They stand drouth fairly well, and make a good growth of green manure to plow under in the fall or early the next spring. The objection to cowpeas and soy beans on northern soils is that they do not make such a very heavy growth, and, moreover, the price of seed is generally about $3 a bushel.

We suggest that our Illinois correspondent try a rotation of corn and oats, drilling in a mixture of vetch and rye with a single horse wheat drill in the corn in August, and plowing the rye and vetch mixture under the next May for another crop of corn. In the corn which is to be followed by oats, no vetch and rye should be seeded. After the oats are taken off and the land is disked up, cowpeas or soy beans might be put in. By following a system of this sort it should be possible to keep up the soil fertility. As to whether or not it would be economical can be determined only on experiment. We suspect that it would pay better to buy the limestone so that alfalfa and red clover might be grown. If our correspondent has the time, money and inclination it would be interesting to compare the two systems. Under the one system lime would be bought and the humus and nitrogen would be furnished by red clover or alfalfa. Under the other system no lime would be bought and the humus and nitrogen would be furnished by cowpeas, soy beans or hairy vetch. Under either system it would probably be necessary sooner or later to buy rock phosphate to keep up the phosphorus supply. Our readers must realize that it is impossible permanently to keep up the phosphorus supply except by applying rock phosphate, acid phosphate, bone meal, or very large quantities of barnyard manure.

THE DRAFT HORSE ON THE CORNBELT FARM.

BY WILLIAM H. ADE.

(In The Breeders' Gazette.)

In the spring of 1877, when a lad of seventeen, I started farming for myself on a rented farm in Newton county, Indiana. This is part of the grand prairie that covers central Illinois and extends over a few counties in Indiana, and is one of the favored regions of the cornbelt.

The first team I owned that year was a pair of gray mares, weighing less than 2,000 pounds, well mated and very useful for riding, driving, or hauling our crops to market. That was before the day of disc harrows, self-binders, or gang plows, and we used light walking plows and cultivators. I have owned many horses since but do not think I ever owned a better team for farm work than this pair. Our roads were so bad we could not haul a heavy load except when they were dry or frozen solid.

Our farm horses were a sorry lot—a bunch of nondescripts. That was in the day of horse-cars in Chicago. As soon as the street-car horses were out of commission on the pavements they were shipped out to the cornbelt and sold to farmers, who were more than pleased to get them, as they soon recuperated and made useful animals on farms. In the early '80's the great northwest was opened up for settlement and the demand for good cheap work horses was so great that trainloads of our poorest horses found a good market at very high prices. When the farmer started out to replace these horses he wanted something better. This was the beginning of improvement in our draft horses in the cornbelt.

The same spirit of wanting something better has been growing ever since, and is responsible for what we often see in our horse market quotations, "The farmers are the best buyers." We have been putting forth our efforts here in this county to raise the best draft horses, and I have sold to farmers yearly from fifty to one hundred high-grade draft two-year-old colts to be worked and finished out by the buyers. Many other farmers are doing the same thing on a smaller scale, and it would seem as if we would over-supply the market. A buyer will come in here and in one week's time gather up and ship to the eastern market more good draft horses than I can replace with coming three-year-olds in a year. It only takes one day to ship a load of good horses away, but it takes three years to grow colts to take their places on the farm. Here is where our trouble comes in. For every good marketable draft gelding we raise we have two common ones and buyers run after us to get the good geldings and refuse to buy the common ones. Before the buyer leaves the farm he has persuaded us to not only keep the common ones but has talked us into pricing a good mare, and it is the same old story—"I priced her so high I did not think he would buy her."

We need more than anything else just now a market for this horse that fails to come up to the different standards demanded by our horse markets. I am willing to go on record as predicting that it will not be many years before we will have a market for this class of horses for slaughtering, and the horse raiser will be rid of a great handicap and the supply of our meat products will more equally meet the demand. While in Belgium I met a farmer who had worked in America and spoke the English language, and at his urgent invitation I dined with him. After the meal was over he asked if I knew what I had been eating. I assured him I had the utmost confidence in him as a host, and had eaten what he had put before me and asked no questions. Then he told me the worst, and right there I was convinced and, though prejudiced as all Americans are, I had to confess that "horse meat is good to eat" if you do not know what you are eating.

The first thing necessary to raise a draft horse is to have a draft colt. Our farmers now have a very fair start in stocking their farms with a good class of mares, and almost every neighborhood has at least one good imported or American-bred registered stallion of one of the recognized draft breeds. These mares, weighing from 1,400 to 1,600 pounds, mated with a good stallion, produce colts from which we must grow the draft horse.

When mares are worked, the colts should be left in a roomy stall in the barn and given all the oats they will clean up. They should weigh at six months old from 700 to 800 pounds. This is the critical time in the life of the draft horse. If properly cared for, he should never stop growing during the first winter and should develop into a big, rugged colt weighing 1,000 pounds at twelve months old. But if he is turned out into the stalk-fields and has to seek shelter on the sunny side of the straw stack he will soon slide into the scrub class and will weigh no more at twelve months than when weaned.

On the other hand, perhaps a farmer will kill his colt with kindness and keep him confined in a box-stall and give him all he can eat and drink and will tell how much his colt has gained. In the spring he has developed along with his colt a pair of bog spavins that puts him in the scrub class several degrees below his straw-stack-wintered brother. The happy medium between these two extremes has enabled me to have the best success in colts. If a man will start a colt when taken from the mare in the fall by giving him, in addition to the oats which he has learned to relish, a ration of separated cow's milk, he will soon learn to meet his master half-way when he sees the bucket and will drink more than is good for him, if not prevented. I usually allow a colt about a gallon morning and evening and prefer to feed it while yet warm.

Size alone does not make a draft horse; we must have also color and quality. A colt cannot develop these qualities in a box-stall. In raising cattle we strive to put on fat but in raising horses we must develop the muscles or the colt will be useless when put to the hard work for which he is intended. I provide my colts with a good box-stall and see that they have a good bed and a good feed night and morning, and every day they must run at large over the farm. I usually have a bluegrass pasture which has been allowed to grow up in the fall to furnish them some green feed in addition to the fields of standing stalks, the usual winter feed on a cornbelt farm. With this kind of treatment colts will go out in the spring not fat but large, well-developed, healthy yearlings, more than half the job of making them first-class draft horses being accomplished. If one should have, when he weans his colts in the fall, a blemished one or a scrub, he should not be deceived into thinking he can perform a miracle and make a good horse out of a scrub colt. Sell him, if possible, or give him away to a less enterprising neighbor, if necessary, and be relieved of the discomfort of being compelled to see a colt in the bunch you are ashamed of, for it will always be standing between you and your best colt when you wish to show the bunch to visiting neighbors.

England with the Shire, Scotland with the Clydesdale, France with the Percheron and Belgium with the Belgian have each made a great success by years of building up and breeding along certain lines until they have attained the size, color and uniformity required in a draft horse. In this country we have tried an entirely different plan. We hoped to get the ideal type by buying from each of these countries their very best and like the magician who puts everything in a hat and stirs them up and by waving his hand and by saying the magic words produces anything one may call for, we hoped by this mixture to produce a draft horse; but we have not yet learned the magic words and our efforts have been a failure.

I shall have to plead guilty of attempting this hocus pocus way of building up a draft breed, but after a short trip through some of the breeding districts of Europe I was not long in reaching the conclusion that if we ever wanted to compete with them in the production of any breed of horses we would have to make a radical change in methods. After wasting the best years of my life in raising nondescripts, I am now starting in with one breed and have stocked our farm with some good young mares which I brought home with me from Belgium two years ago; also a few stallions for our own use. I am convinced after my short experience that we can raise just as good horses here by securing good imported mares and stallions as a foundation and giving them our individual attention as can be raised anywhere in the world. With our land selling at $200 an acre and more we must quit raising anything but the best. We should learn a lesson from the farmer of Belgium who pays $24 an acre cash rent for his pastures, buys all his grain from either America or Argentina and then finds his market here in the cornbelt for his horses.

I have always thought our state fairs and the International at Chicago gave too much attention to the imported horses and very little, if any, to American-bred horses. The importer who is willing to travel the world over to find the best to put into our showrings and sell to farmers to improve their stock deserves all the encouragement we can give him; but it is not fair to compel a farmer who only raises a few colts each year to go into the showring and compete with the best in the world. He tries the game once or twice and gets discouraged and quits. Neither is it fair for the importer, as it is no credit to him, and by discouraging the young breeders he is losing customers for his best stallions.

Proper encouragement should be given the American-bred colt and classes made and premiums offered sufficiently large to cover the expenses of the trip to the fair. As superintendent of the draft horses at our Indiana State Fair I suggested a class for the best weanling draft colt, any breed, pure-bred or grade of either sex, and we are offering $100 in premiums. The secretaries of the different associations should so adjust their specials that the bulk of the money would go to American-bred horses. The object of our state fairs and the different horse associations should not be to encourage the importation of horses, but rather the encouragement of the breeding in America of as good horses as we can buy abroad. The prosperous conditions of our cornbelt farms have been a detriment rather than a benefit to the breeding of better horses. A great many of our well-to-do landowners started out bravely in establishing good stock farms and stocking them with splendid horses. The rapid advancement in land values and a gradual realization of the fact that they had enough of this world's goods caused many good farmers to sell or rent their farms and pastures. Where once grazed good registered mares, corn is being grown and mules are being used to cultivate the fields.

We cannot predict the future for the draft horse without taking into consideration the tractor. Our hardest work on the farm consists in harvesting and fall-plowing. We often hear farmers make the remark, "I would like to own a good team of registered mares if I thought the hired man would not overheat them." Our large fields and the heavy work in August and September have been the ruination of many of our best horses. One hot day with a pushing driver will do the work. I think too much of my good brood mares to work them during the heat of the summer on the binder or on that sure horse-killer, the gang plow. There is need on every farm for a power that will relieve the horse of the killing strains and encourage the farmer to use the mechanical aids and thereby save his good mares for the lighter work and for raising colts. We have a tractor, and while we have not had the best success with it, I think it is here to stay and will be perfected, as has been the automobile. The horse is firmly established on the farm; he can be assisted but never replaced by any other power. The tractor will be the salvation of the draft horse. Instead of being the farmer's slave he will be the farmer's pride, and he will have finer horses and the quality will grow better until the cornbelt farm will be known as the home of the draft horse.

A CONVENIENT FARM HOME—HOW A FAMILY SOLVED THE HOME LABOR PROBLEM.

BY MRS. R. K. BLISS IN SUCCESSFUL FARMING.

Last summer we desired to obtain first hand information in regard to certain phases of farming, and getting a knowledge of real facts would necessitate visiting a large number of farms of all types—good, bad and indifferent.

After canvassing every plan that seemed feasible we decided that by far the most practical and satisfactory method of doing this, and at the same time having a vacation, was by traveling by auto. We also decided that Mr. B. should be the chauffeur while I should accompany him in the highly responsible position of private secretary and first assistant in time of great need. (Everyone who drives an auto will appreciate just how responsible was my position.) We therefore purchased a roadster, tent, and army cots and proceeded to put our plans into execution, spending most of the summer traveling from farm to farm and covering in all about four thousand miles in Nebraska, Iowa, and Minnesota.

While Mr. B. got from the farmer the information he desired, I was usually invited into the home. One of the most interesting things I thus learned was how the better farm homes have solved or are coming to solve some of their greatest problems.

Wherever we went there was the same old story, "I just can't get anyone to help me in the house." So here and there water, the gasoline engine, and electricity with all the modern improvements and labor saving devices which they make possible are being brought into these homes and are successfully solving the help problem. Not only are they solving that problem but they are entirely doing away with much of the drudgery that has often made the farm woman so anxious to move to town, and are helping in no small way to make the boy and girl see that the farm is one of the greatest places in the world.

I was particularly impressed with the farsightedness and good judgment which had been displayed in planning and equipping one home which we visited, and much interested in the story of this home as it was told me by the wife and mother.

The parents started life with no capital but their strong young bodies and an indomitable courage. They rented for some years and by dint of rigid economy finally bought a farm of their own. There was a small house on the place at that time and in this they lived. As the years passed welcome little strangers arrived and finding this a real home—one much to their liking—stayed on and thrived and grew into strong, lusty, vigorous boys and girls, taxing the capacity of the little old house to the utmost.

Finally, the farm was paid for and then money was saved for a new home. But the children were older now and must be kept in school so saving was slow work.

PLANNING THE NEW HOME.

There came a time, however, when plans for the new house were begun and then what a babble of voices there was as, assembled in family council about the table in the old kitchen, each one voiced the thought uppermost in his or her heart. One mentioned larger bedrooms and plenty of them; another spoke of having enough well ventilated closet room so that clothes could be kept from becoming "wrinkly and stuffy"; another wanted "a nice big dining room so that when there is company, I won't have to wait for the second table." Mary, who is socially inclined, thought it very important to have a living room large enough for parties and church societies.

Then Father, who had noticed Mother's silence voiced what he knew was in her heart: "If we don't have anything else I want Mother to have a good kitchen with plenty of windows and enough built-in cupboards so that she can have everything handy. I've been studying it over and it seems to me that a medium sized room with a place for everything is much better than a great big one with things all scattered out so that a woman has to walk a mile to get a meal."

This must have been a long speech for Father as he is a man of few words, but Mother's happy smile and glistening eyes as she told me of it showed how glad she was that he had been the one to think and speak of the kitchen.

After this day by day the plans grew and took shape. Meanwhile the eldest son, a young man of eighteen or nineteen years, had been reading and thinking. He was naturally of a mechanical turn of mind and one winter while attending a short course at his State Agricultural College had gotten an idea of some of the modern inventions most useful on a farm. Out of doors he had gradually begun making use of various labor saving devices; now the thought came and grew: "Why shouldn't Mother and sisters have their labor lightened in the same manner?"

THE BASEMENT.

Plans for the house included only a part size basement with one room for furnace and fuel and one for fruit and vegetables. He suggested enlarging the basement, making five rooms instead of two, and having one for engine room, one for dynamo room, and one for laundry. He explained how electricity for lighting might be generated and stored while the gasoline engine was running the washing machine or a pump to furnish the house with water. It seemed like a big undertaking but the more they thought and figured the more they thought they could do it.

The mother had had visions of beautiful new furniture for each room but she knew that that could be waited for and so the money intended for furnishings went to pay for the conveniences which make that home what it is today—one of the most perfectly equipped of farm homes.

The furniture from the old house was moved over to the new; one or two beds, a dining table, chairs, range and other kitchen equipment were added and the family began to enjoy life in the new home. True the living room was almost devoid of furniture but no apologies were necessary, the choice was so obviously a wise one.

HOW THE WORK WAS LIGHTENED.

And the mother said, "This house with its ten rooms and its large attic and basement isn't so hard to care for as that little house of five rooms. The washings and ironings were so hard to do in the kitchen where we cooked and ate. Now our engine does the washing and while it is still cool in the morning we can finish the ironings with the electric iron. With my built-in cupboards, and dumb-waiter to carry things to the basement to keep cool, I am saved many steps every day. I thought at first that I wanted a summer kitchen in which to cook during the hottest weather—we had a small one built on back of the old house—but instead of going to that extra expense we put a few dollars into a kerosene stove and a fireless cooker. You would be surprised to see how cool I can keep my kitchen and all my work is done in the one room with no running back and forth."

I might add that the laundry chute for soiled clothing and linen which went directly from the bath room on the second floor to a basket in the laundry room was another great time and labor saver. As soon as possible they are going to purchase a medium priced electric vacuum cleaner. From my own experience I know they will find this an invaluable help and a great saver of time and strength.

The aged grandmother showed us the large airy attic with its great spaces for storage and ample room, too, to hang the whole washing to dry in very cold or stormy weather.

SAFETY IN THE BARN.

Later the father, who with justifiable pride had been listening as the son explained to us just how the electricity was generated and stored on wash day, added a word, "I was always worrying about fire in the barns when the boys and I had to be in there so much with the lanterns. We had a good electrician wire the barns and milk house for electric lights and now I feel much safer; we need not use lanterns at all and I am sure the wiring is all right. With better light we get through our work quicker, too."

What matter that the living room wasn't furnished at once? What matter that new curtains and rugs couldn't be placed in each room? They have chosen the better part. Furniture, curtains and rugs may and will be added little by little, while the larger and more expensive improvements, if omitted now, would not have been added in years.

Father, mother and grandmother are growing younger in the closer companionship with the children which this mutual planning, mutual foregoing, and mutual pleasure have brought about.

There is no danger of that family's wanting to give up the farm and move to town. When the father and mother want to turn the management of things over to one of the sons there will be built near this one, another house, perhaps somewhat smaller and if desired the same lighting system may be utilized for both houses.

I feel sure somehow that on that farm progress has just begun. Progressiveness begets greater progressiveness. Putting labor saving devices into the barns led to putting the best conveniences into the home. Putting electric lights into the house led to having them in the barn. Being alert, open minded and up-to-date in thinking along one line leads to progress along all lines. It means branching out fearlessly.

This farmer is already breeding pure bred cattle and hogs. He and his sons will be among the leaders in scientific agriculture in their community as they are now in scientific stock raising. The wife and daughters will be among the leaders in Home Economics.

And such progress is contagious. Others about them, who have had even better opportunity financially but have lacked the initiative, will find that they, too, need and can have such conveniences. Although it would be much better to put them in when building, with careful planning a house otherwise satisfactory may be remodeled and modern improvements installed.

A SYSTEM OF FARM COST ACCOUNTING.

BY C. E. LADD, AGENT, OFFICE OF FARM MANAGEMENT.

(Farmers' Bulletin 572, U. S. Dept. of Agriculture.)

INTRODUCTION.

The farmer wishes to know how much he is making or losing on his business each year, how much he is making or losing on each crop or class of animals, and how he can improve his business so as to make more money. Cost accounting for the farm is the same sort of work which the large meat-packing companies are doing to learn whether they make a profit on canned goods, smoked meats, etc. The farmer wishes to know whether his wheat pays and whether his cows or orchard pay. These are some of the things which a set of farm cost accounts will show.

Many farmers are desirous of keeping accounts of this sort, but do not know how to start. Undoubtedly many are deterred from starting because they believe that they do not know enough about bookkeeping and because they have in mind no definite method of procedure. To any such men who desire to keep accounts and who have not worked out a system for themselves, it is believed that the system outlined in this paper will be helpful. Those who are already keeping accounts but are not satisfied with the results obtained may find here some suggestions of value.

Farm cost accounting, of necessity, involves many estimates, but there is no reason why one should lose faith or be discouraged because of them. If the worker has reasonably good judgment and is not prejudiced in favor of any crop or animal he can obtain satisfactory results. The systems of cost accounting in use by the large packing companies and by large wholesale grocery houses involve as many estimates and do not give any more accurate results than do well-kept farmers' accounts.

Cost accounts cannot be absolutely exact. They contain many estimates. It is foolish to spend time with refinements in methods of bookkeeping that are designed to check exact work to the last cent. In fact, attempts to find insignificant errors often disgust persons with the whole question of accounting.

Of the desirability of keeping accounts on a farm much has been said in the agricultural press. In an agricultural survey of Tompkins county, N. Y., made in 1907, it was found that 45 per cent of the farmers already kept some sort of records or accounts.

This bulletin simply aims to give a description of a system of farm cost accounting which has been tried for three years in the state of New York with fifty-three farmers under widely differing conditions and has proved fairly successful. It is a method so simple that a farmer can keep it without assistance.

TIME REQUIRED TO KEEP ACCOUNTS.

The first question which the practical farmer asks about a set of accounts is, "How much time will it take?" The time required is one of the chief objections made to most kinds of farm cost accounting. The farmers who have used this particular system during the past year answer the question of time by estimates ranging from two to ten minutes a day. The average seems to be about five minutes for the daily entries. To this must be added a number of hours of work at the end of the year to close the accounts. This time will vary with the type of farming, the complexity of the business, and the degree of accuracy and completeness with which the accounts have been kept.

BOOKKEEPING KNOWLEDGE UNNECESSARY.

No bookkeeping knowledge is necessary. In all the co-operative work done so far, bookkeeping training, as sometimes given in commercial schools, has seemed a detriment rather than a help. Those trained in commercial bookkeeping have a tendency to insert technicalities and complexity of entry which would be all right for a business house, but which are entirely out of place for a practical farmer who wishes to do cost accounting. It is not necessary to know the difference between a daybook and a journal or to know how to get a trial balance in order to keep good farm cost accounts.

A FAVORABLE TIME TO START ACCOUNTS.

Accounts may be started on an ordinary farm any time after the last crop is harvested in the fall and before the first crop preparations are started in the spring. The exact date will depend upon the geographical location of the farm and the nature of the business or type of farming in practice. The time should be as late as possible, in order that there may be the smallest quantity of last year's crops on hand to be inventoried. However, the date should be early enough to give the farmer sufficient time to close his year's accounts, work out results, plan the next year's business, and start new accounts before the spring crop work begins. In a large majority of cases this date will be January 1, March 1, or April 1. For a tenant the date for taking an inventory will, of course, correspond to the date of his lease.

REQUIREMENTS FOR KEEPING A COMPLETE SET OF FARM COST ACCOUNTS.

In order to have a complete set of farm accounts three records are necessary:

(1) An inventory at the beginning and at the end of the year.
(2) An account of all money paid out or received.
(3) A record of all work done by men and horses during the year.

INVENTORY.

The inventory on an ordinary farm is a matter requiring from two to five hours' work at the beginning and at the end of the year. The same inventory, of course, is used for closing one year's accounts and starting the next, so that this work is done only once a year. This inventory should be a detailed list, with values, of the following: The farm, subdivided into buildings and land, each building being listed separately, with the number of acres of land and its value per acre (the total value of buildings and land listed being equal to the value of the farm); the horses, listed by name and giving their ages, followed by other live stock listed separately, giving value per head; machinery, each item being listed separately, except that small tools may be bunched as one item; quantities of feed, produce, and supplies on hand; growing crops (value of labor and materials already spent for next year's crops); cash on hand and in bank; and bills receivable. The total of all these should be found and the mortgage and bills payable, if any, subtracted from it. The difference is what the farmer is worth above debt, or his present net worth.

In estimating values, the market price at the farm, or the price at the selling place minus the cost of hauling to market, should always be the standard. The value put upon anything should be what it is thought can be obtained for it at a normal sale and should neither be overrated nor underrated. In either case, one is fooling only one's self. It is better to be fair and unprejudiced and use one's best judgment.

TABLE I.—*A sample summary of an inventory.*[1]

Item	Mar. 1, 1912	Mar. 1, 1913
Farm, 200 acres (including buildings)	$8,000	$8,000
Cows:		
20 head at $60	1,200	
15 head at $70		1,050
Horses, 6	900	850
Machinery	783	800
Feed and supplies	1,100	850
Growing crops (cost of labor and materials)	110	125
Cash	97	437
Bills receivable	75	95
Total resources	$ 12,265	$ 12,207
Mortgages and bills payable	3,125	2,300
Net worth	$ 9,140	$ 9,907
Gain for the year	767	
	$ 9,907	$ 9,907

[1] In the complete inventory each cow, horse, and machine is listed separately.

The form in Table I is presented here as a suggestion as to the way in which the inventory may be classified and summarized after two inventories are completed.

If preferred, the inventories may be kept on pages by themselves in the financial record book and the entering of inventory values to the individual accounts may be deferred until both inventories are complete and the accounts are being closed at the end of the year. The method of entering these amounts is given under "Closing the accounts at the end of the year."

No other account will give so much information for the time and labor expended as the annual inventory. By comparing the net worth as shown by the current inventory with the net worth shown by that of the previous year, the farmer can tell whether he has made a gain or loss and how much, after paying from farm receipts what he has expended for the living expenses of the family.

If money has been added to or taken from the business by gifts or by transfer from some other business that is not included in the inventory, these items would have to be known in order to tell the gain or loss. Usually the farmer lists all his property in the inventory, so that there is no chance for such an error. He may have only a small amount of cash on hand, as the gain may all be invested in a new team, additional cows, or extra feed. On the other hand, the cash on hand may be much larger than the year before, thus making the farmer feel more prosperous, whereas the number of head of stock or the quantity of feed on hand may be so much less that he has actually farmed at a loss that year.

The annual inventory shows the annual gain or loss on the farm business, but it does not show what crops or what animals have made a gain or loss. On nearly every farm where accounts have been kept, the gain or loss for the year resulted from losses on several accounts and gains on several accounts. In every case the farmer was much surprised to see which accounts showed a gain and which a loss. Results like these can only be shown by a complete system of accounts.

FINANCIAL RECORD.

A record of the receipts and expenditures on the farm is necessary for a complete set of accounts. For this purpose a book called by stationers a "broad daybook," or "journal," is used. The requirements are that there be a place for a date on the left-hand side of the page, a broad space in the middle of the page in which to write explanations, and columns ruled for dollars and cents at the right. The page is ruled and items are entered as shown in the sample account with potatoes in Table II. The financial record book at the end of the year becomes the completed account book and will have a summary of labor entered in it from the work record as described later.

A separate account is kept with real estate, each crop grown, each class of animals, machinery, labor, interest, persons dealt with, bills payable and bills receivable, and with such other items as may be found necessary or convenient.

The items that make up bills payable and bills receivable should be listed in the inventory at the end of the year, as mentioned, either from memoranda or in any other way which may be found convenient. In closing out the inventory at the end of the year, the items for which money is due or owing should be charged or credited to their respective accounts. When these bills are settled, during the early part of the following year, the entries should be made under bills payable or bills receivable, as the case may be.

In this book two pages facing each other are taken for each account. The name of the account is written at the top of the page. The right-hand page is marked "Credits" and is used only to record credits to the account. The left-hand page is marked "Charges" and is used only for charges against the account. The pages then appear as shown in the sample account with a crop of potatoes (Table II).

TABLE II.—*A sample account with potatoes in a 14-acre field.*[1]

Charges			Credits		
1913	Item	Amount	1913	Item	Amount
June 3	Seed, 160 bushels, at 45 cents	$72.00	Oct. 5	Sold, 226 bu., at 60.18 cents	$136.00
4	Corrosive sublimate, 3 ounces	.30	20	Sold, 510 bushels, at 62 cents	316.20
10	Seed, 43¾ bushels, at 55 cents	24.06	Nov. 1	Sold, 241 bu., at $1.083	261.02
11	Corrosive sublimate, 6 ounces	.60		Saved for seed, 135 bu., at $1	135.00
July 12	Paris green, 6 pounds	1.32		Saved for home use, 16 bushels, at 60 cents	9.60
15	Lead arsenate, 160 lbs.	14.40		Residual manure, 60 per cent of 1911	18.00
	Use of land, 5 per cent on $100 per acre	70.00		Residual manure, 30 per cent of 1910	6.00
	Man labor, 796 hours, at 19.02 cents	151.40			
	Horse labor, 839 hours, at 10.46 cents	87.76			
	Equipment labor, 839 hours, at 3.5 cents	29.36			
	Manure, 60 per cent of 1910 application	12.00			
	Manure, 100 per cent of 1911 application	30.00			
	Total charges	$493.20			
	Gain	388.62			
	Grand total	$881.82		Total credits	$881.82

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[1] In the account book the items for "Charges" will occupy the entire left-hand page, and those for "Credits" the entire right-hand page.

Now, suppose that on a trip to town on June 1 one spends $1.40 for horseshoeing, $3 for fencing, $5 for cow feed, and receives a $65 check for 6,500 pounds of milk. The entries are made as follows: The account marked "Horses" is turned to and on the left-hand page is entered "June 1—Shoeing, $1.40." The "Real Estate" account is turned to and on the left-hand page is entered, "June 1—Fencing bought, $3." The "Cows" account is turned to and on the left-hand page is entered, "June 1—Cow feed bought, $5." On the right-hand page, under this same account, is credited, "June 1—Milk, 6,500 pounds, $65."

These entries are now complete; they will never have to be posted or entered again in any way. It is often advisable to keep a memorandum book in the pocket in which to make notes when money is paid out in town, so that the items will not be forgotten before they can be entered in the account book.

Whenever money is paid out, the farmer turns to the account in the book to which this money should be charged and enters it on the left-hand page. Whenever money is received the amount is credited to the proper account by entering it on the right-hand page under that heading. These are the only entries made. The amounts are charged or credited directly to the accounts to which they belong.

To find the account wanted is made much easier by indexing the books in the following manner: Take a piece of adhesive tape about 1½ inches long, bend it double, and stick it on the edge of the page in such a manner that it projects about one-half inch. On this projection write the name of the account kept on that page. Put a piece of tape on each account, arranging them one below the other along the edge of the book so that all can be seen at the same time. Tabs suitable for this purpose can be purchased from most stationers.

WORK RECORD.

For the work record, a book ruled exactly like the financial record book, except that there should be two double columns at the right of the page, may be used. This should be indexed in the manner already described. In this book no separate pages are used for charges and credits and no entries are made in terms of dollars and cents. In the first double column at the right-hand side of the page are entered man hours and minutes, and in the second are written horse hours and minutes. These headings should be placed at the top of each column, so that the page appears as shown in Table III. This book contains simply a record of the work done on the farm during the year, classified according to the enterprise for which it was done, and it also gives the date and number of hours of each operation.

The sample record with wheat shown as Table III will serve to illustrate the way the items should appear in the work record.

TABLE III.—*A sample work record with wheat.*

1912	Operation	Man		Horse[1]	
		Hours	Minutes	Hours	Minutes
Aug. 2	Plowing oats stubble	8	30	17	
	Rolling	1	45	3	30

[1] Horse hours are expressed in terms of one horse for one hour. Hours of horse labor should not be charged against the horse account.

Suppose that the date is May 1. The work done on this day aside from chores was drilling in oats 6 hours, with 2 horses; plowing for corn 8 hours, with 3 horses; repairing plow, 2 hours of man labor alone. The entries are made as follows: The "Oats" account is turned to, "May 1" written in the left-hand column, the single word "Drilling" written in the broad space in the middle of the page, and the figure "6" entered under man hours. Since 2 horses were used for 6 hours, the figure "12" should be entered under horse hours. In the same way, on turning to the "Corn" account, "May 1—Plowing, 8 [under man hours], 24 [under horse hours]" is entered. Turning to the "Machinery" account "May 1—Repairing plow, 2 [under man hours]" is entered. When this is done, the work entry for the day is complete; it will never have to be posted or written again. The original entry is the only entry made.

For chores a special page should be ruled for each month, as shown in Table IV.

TABLE IV.—A *sample heading for a page of an account book showing the special ruling required for entering chores.*[1]

1913	Horses		Cows		Poultry		Hogs	
	Hours	Minutes	Hours	Minutes	Hours	Minutes	Hours	Minutes
May 1	2	20	4	15	----------	30	1	10
2								
3								
4								
etc.								

[1] If horses are used in the chore work, extra columns must be ruled under each heading to provide a place for the entry of hours and minutes of horse labor.

It is more accurate to enter the chores every day; but, if chore time is fairly uniform each day, so that the chore work for the entire month can be based on fewer entries, an entry at the beginning, at the middle, and at the end of the month will ordinarily be sufficient. Entries should be made at other times if the time spent on chores changes; for instance, when the cows are turned to pasture, when additional cows freshen, or when a change of feed is made which will require more time or less time for chore work.

DAILY WORK NECESSARY TO KEEP A COMPLETE SET OF ACCOUNTS.

The daily work of keeping a complete set of accounts ordinarily consists in entering receipts and expenses for that day and recording the hours of work done. On many days there are no cash receipts or expenses, as these are likely to be bunched on the days when trips are made to town. An actual day's entry made by one of the co-operators was as follows:

1912	Item	Man hours	Horse hours
July 5	Cultivating corn	6	12
	Cutting hay	4	8
	Unloading hay	1	1
	Eggs, 35 dozen at 22 cents		$7.70
	Pulverizer repaired		.75
	Fork bought		.60

The entry of these items with the filling of the chore blanks for that day, if necessary, should not take more than five minutes. It is being done in less than an average of five minutes every day by 51 New York farmers, whose education varies from that acquired in a district school to that of the college graduate, all of whom are working every day in the field with their hired men.

CLASSIFICATION OF FARM PRODUCTS AND FEED.

Entries of the value of all home-grown feeds consumed must be made in the live-stock accounts. All the feed bought is charged in the financial record book directly against the animals for which it was bought. If the hog feed were to run out some day and a bag of cow feed were taken to the hogs, the entries should be made in the financial record book just as if the cows had sold this feed and the hogs had bought it.

At the time of threshing or at the close of haying the total crop may be entered as a memorandum on the credit side of the proper crop account, but the figures are not yet to be carried to the money column. Estimates can be made with fair accuracy by measuring bins and haymows or by counting the loads drawn and estimating the average weight. The values will be entered when the product is sold or transferred to the animals. When these crops are fed out, an estimate must be made of the proportion fed to cows, horses, and other stock and these accounts charged with the values thereof, credit being given the crops. The quantity sold will be known from weighing bills or otherwise, and it should be credited as a cash receipt.

Whenever grain or hay is fed from the same bin or mow to two or more classes of animals, a day's ration for each class of animals may be weighed or measured once a month or oftener and the proper proportion of the total feed, based on these weighings and the number of days fed, charged to each class of stock. This method will give a reasonable degree of accuracy if weights are taken fairly often. When cows and horses are fed from separate haymows, there will be no difficulty in keeping the feed separate. Where concentrates are purchased in large quantities and fed to several classes of animals, a record may be kept in the feed room of the number of sacks fed to each class of animals.

CLASSIFICATION OF TROUBLESOME ITEMS.

The entry of some items will be confusing to the beginner. Generally common sense will straighten him out if he will ask himself "What account really deserves this credit?" or "What account really deserves this charge?"

The real estate and the machinery accounts usually puzzle the beginner in keeping farm records. The former is more or less of a general account in this financial book and work record. All items for fencing, ditching, improvements, repair of buildings, removal of old fences, new buildings, taxes, and insurance should be charged to this account. Many of these are somewhat permanent and are charges which the landlord ordinarily pays on farms leased on share rental. This account should be credited with any receipts from land rented out, old buildings sold, stone sold, and other similar items. If any special improvement is made, such as when a line of tile is laid, a building put up, or a silo built, one may open a separate account with it, if so desired. When complete, the cost should be figured and this amount charged against the real estate account as an improvement.

Against the machinery account all costs of repairs to machinery and tools, all harness items, and the purchase of new implements or tools should be charged. This account should be credited with all receipts from sales of old machinery or machinery rented to neighbors. Under the work on machinery will be entered "Getting new plow points," "Repairing roller," "Storing away machinery," "Making new whiffletrees," and other similar items.

Such work as manuring may be charged against the crop to which it is applied, or an account may be kept with manure and the total cost of manure, including the cost of hauling, may be distributed to the different crops at the end of the year.

In this system no account is kept with "General expense." Nearly all items of this kind can be distributed as they occur. For instance, if a telephone is kept for the purpose of directing the hired man, the expense is charged direct to the labor account. If the telephone is kept for personal and general farm use, it may be charged partly to the personal and partly to the real estate account. Such items as postage stamps, if small, may be charged to the farm account, but if a large number are used for one enterprise some of the purchases may be charged to this one enterprise.

It is nearly always possible to scatter the charges to different accounts as they occur. A general expense account, if found to be necessary, should be kept very small.

MISCELLANEOUS NOTES.

There are many miscellaneous notes which it is desirable to keep in the same books with the accounts. Following are some of the entries which have been inserted by farmers and which are especially handy for later use. Sometimes they are merely written on the page where they seem to belong; at other times they are kept by themselves in the back of the book: Date of "last killing frost in spring;" date of "first killing frost in fall;" date of "death of [horse or cow];" "height of hay [or ensilage]" at a certain date.

Other miscellaneous records may be kept, such as herd records, maps of ditches, and maps of the farm, showing the crops for each year. These are not necessary in connection with the cost accounting, but may be kept if the farmer desires, and they will often prove useful.

CLOSING THE ACCOUNTS AT THE END OF THE YEAR.

Considerable time is required to close the set of accounts. However, this figuring should come in the winter at a time when other work is usually slack and when the weather is more favorable for working indoors than out. A definite order should be adhered to in closing the accounts. This order may be as follows:

(1) The first step is to take a final inventory in the same manner as at the beginning of the year. This inventory should include all bills that other persons owe the farmer and all bills which the farmer owes to other persons.

(2) The list of bills payable should be inspected and any items that have not yet been charged should be charged to the proper accounts. For instance, if $15 for labor is still due the hired man at the date of closing, this item should be entered as a charge against labor.

(3) The list of bills receivable should be inspected, and any items that have not yet been credited should be credited to the proper accounts. For instance, if the creamery owes the farmer $65 for milk and a neighbor owes him for some feed, the $65 should be entered as a credit to the cow account and the feed item entered as a credit to the account from which the feed was originally taken.

(4) The record of all feed transferred to the live stock should be completed, charging the various animals and crediting the various crops. Produce raised and fed is charged against the animals at what it is worth on the farm. Suppose, for instance, there were 80 acres of hay with a total yield of 120 tons (20 tons of which had been sold and a credit entered) and that the feed-disposal memorandum showed 60 tons fed to the cows and 15 tons fed to the horses, leaving 25 tons on hand. If hay is worth $12 per ton at the barn, the hay should be credited by entering on the right-hand page of the hay account "60 tons to cows @ $12=$720; 15 tons to horses @ $12=$180." Now, charges against the cows "60 tons of hay @ $12" and against the horses "15 tons @ $12" should be made. When the value of the hay on hand, 25 tons at $12, as shown in the record inventory, is entered as a credit to the hay account, the credits to this account will be complete.

(5) The various classes of live stock should be credited with the portion of unused feeds which were charged to them at the time of purchase or harvest. These farm items, will, of course, appear in the second inventory under the group headed "Feeds, produce, and supplies."

(6) The use of pasture should be credited directly to the real estate or to a pasture account and charged against the animals using it. The amount charged for pasture should be as nearly as possible the market price; that is, the price for which pasture rents in that region.

(7) The value of produce used in the house, if not noted before, should be entered. The proper crops or animals should be credited and charges made against the personal account. This item includes estimates of the quantities of milk, eggs, potatoes, and other products used by the family.

(8) The entry of value of board, produce, or other allowances furnished to the laborers should be completed. These charges should be made against labor and the proper accounts credited.

(9) The value of unpaid labor, such as work by the farmer himself, by boys in the family to whom regular wages are not paid, and milking or other farm work by women of the family should be entered. Make these charges against labor and credit the personal account.

(10) The animals should be credited with the value of the manure produced and this amount charged against the crops to which it was applied. The valuation of the manure should be made at about the market price at the farm. To find the quantity produced, a record should be kept of the number of loads hauled to the fields.

(11) The proper amounts for the use of the buildings by crops, animals, the farmer, or laborers, should be entered. Each crop, each class of animals, the personal account, and the labor account should be charged with its proper proportion and credit of the real-estate account. As a general rule, 8 to 10 per cent of the current value of the buildings may be charged as rent. The proportion of the whole sum which each class of animals or each crop should pay will have to be determined by the farmer in proportion to the amount and value of the space occupied by each. Charges for the use of the buildings on one farm were made as follows:

(Value of barns, $2,000; use for one year at 10 per cent, $200.)

Amount to be charged	Percentage of $200	Amount	Amount to be charged	Percentage of $200	Amount
Cows	30	$60.00	Horses	20	$40.00
Hay	20	40.00	Corn	5	10.00
Oats	10	20.00			
Machinery	10	20.00			
Hogs	5	10.00	Total	100	$ 200.00

(12) Taxes and insurance paid on personal property should be distributed to the proper accounts. All land taxes are charged to the real estate account and distributed as part of the "Use of land and buildings."

(13) All the hours and minutes of man labor on each enterprise, including the chores, should be added up, these totals being brought together and the sum of the man hours on all enterprises found.

(14) The total cost of man labor for the year should be found.

(15) The rate per hour should be found by dividing the total cost of man labor by the total hours of man labor.

(16) The total number of hours found against each enterprise in the work record should be transferred to the same accounts in the financial record, multiplying each total by the rate to obtain the cost. These items should be credited to labor in the financial record book. When this is completed, the labor account should balance within a few dollars, though if the rate per hour were carried out in full to the last decimal place the account would balance. A difference of 1 mill in the rate for 6,000 hours would make a difference of $6 in the final results, and a difference of one-tenth of a mill would make a difference of 60 cents. This difference or error is not important enough to consider. It may be carried to the "Loss and gain" account, or it may be added to or substracted from one of the larger items of labor, in accordance with whether it is a loss or a gain.

(17) All the hours and minutes of horse labor spent on each enterprise, including any horse labor on chores, should be added up, these totals being brought together and the sum of the horse hours on all enterprises found, just as was done for man labor.

(18) To find the total cost of horse labor, first the horse inventories should be entered, the first inventory as a charge and the second as a credit to the horses. Then the horses should be charged with interest on the average of the two inventories at the current rate in the section and the interest account credited. The ordinary rate charge in most parts of the United States is 5 or 6 per cent on the investment.

(19) The sum of each side of the horse account should be found. The sum of the credits should be subtracted from the sum of the charges and the difference will be the net cost of horse labor for the year. No charge is made against horses for the use of the harness and other horse equipment, all these costs being charged against the various enterprises in the machinery charge, as hereafter explained, on the basis of horse hours.

(20) The rate per hour of horse labor should be found by dividing the total cost by the total hours. The figure thus obtained is the rate per hour.

(21) The total number of horse hours found against each enterprise in the work record should be transferred to the same accounts in the financial record, multiplying each total by the rate to obtain the cost. These items should be credited to the horse accounts in the financial record book. When this is completed, the horse account should balance within a few dollars. The reason for the failure to balance is the same as that already

given for man labor. To make the account balance, the difference can be added to or subtracted from one of the larger items or carried to the "Loss and gain" account, as stated in paragraph 16.

(22) To find the use cost of the machinery, the first machinery inventory should be entered as a charge and the second as a credit to the machinery account, then this account should be charged with interest on the average of the two inventories, as directed for the horse account. The interest account should be credited with the amount of this interest.

(23) The sum of each side of the machinery account should be found and the credit total subtracted from the charge total, the same as for the horse account. The difference is the total use cost of the machinery for the year.

(24) In order to distribute this cost, it may be assumed that for every hour horses were worked machinery was also used. Then each account will have charged against it the same number of machinery hours as horse hours. To find the rate of cost per machinery hour, the horse hours already charged to machinery should be first subtracted from the total hours of horse labor and the total cost of machinery use divided by this difference. Now the use of machinery for the year should be charged in the same way that the use of horses was charged, except the charge against machinery. When this is complete, the machinery account should balance within a few dollars. The difference may be treated as explained in paragraph 16.

(25) Any other accounts of convenience, such as those for fertilizer or manure, if kept, should be distributed.

(26) All the remaining items should be entered in the inventories. The inventory values for the beginning of the year should be entered on the left-hand page of the separate accounts as a charge; that is, the cow inventory should be entered on the left-hand page of the cow account, the hog inventory on the left-hand page of the hog account, and the others distributed in the same manner. The final inventory for the year is likewise distributed to the separate accounts, but the items are entered on their respective right-hand pages.

(27) The interest, based on the average inventories against all accounts not already charged, should be charged and the interest account credited with the total, using the same rate as that used in charging interest against the horse and machinery account.

(28) The proper charge for the use of the land should be entered. The rate should be high enough so that, with the use of buildings as charged in paragraph 11, it will cover interest on the investment in land and buildings, taxes on real estate, and repairs to buildings and fences, for these items were charged to the real-estate account. Each crop should be charged for the land it occupied and the real-estate account credited.

(29) Both sides of the accounts not yet closed should be footed up. The lesser total should be subtracted from the greater in each account. If the charge side is greater the difference represents a loss, and if the credit side be greater, a gain. The sample potato account given in Table II will illustrate a completed crop account.

(30) A list of the losses and gains should be made and the total of each found in order to show the net gain or loss on the whole business.

(31) Each account and the business as a whole should be studied in order to learn how to improve it.

STUDY AND INTERPRETATION OF RESULTS.

Farm accounts are of little use unless studied and conclusions drawn which will enable one to make his business more profitable in the future. It is just as important to study the different items of cost and returns in an account as it is to know whether or not it pays. From such a study it is often possible to learn how to reduce the cost of production or increase the returns so as to make a losing enterprise pay and to make a profitable one more profitable. In studying the results of a year's business, one must keep constantly in mind that these are the results of a single year. Weather conditions, crop conditions, market conditions for the year as compared with an average year, must be considered. For instance, potatoes in 1912 showed large losses on many farms because of the low prices and the quantities lost by rot. However, by studying the potato account to find the cost of producing an acre, then, by considering both an average yield and price for the locality, one could draw the conclusion that ordinarily it would or would not be a profitable business to raise potatoes on most of the farms where potatoes are raised.

The potato account in Table II was studied when it was closed, and the following facts were obtained: Total acreage, 14; total yield, 1,128 bushels; yield per acre, 80.6 bushels; total cost of crop, $469.20; cost per acre, $33.51; total value of crop, $857.82; value per acre, $61.27; total profit, $388.62; profit per acre, $27.76; man hours per acre, 57; horse hours per acre, 60; labor cost per acre, $10.81; horse labor cost per acre, $6.27; cost per bushel, 41.6 cents; profit per bushel, 34.4 cents. The average value per bushel was higher than is ordinarily received for market potatoes.

Besides the satisfaction of actually knowing what crops or enterprises paid and how much, there are many other ways in which the accounts may be useful. They may be used to study the seasonal distribution of labor on the farm as a whole and on separate enterprises, and also to determine what crops and what animals are the most profitable. By comparing one's results with the facts detailed in bulletins on the same subject, one can find how his efforts compare with those of other farmers as to economy of labor, the working efficiency of horses, and many other points.

By keeping farm cost accounts one cannot help but gain an idea of the value of labor. He soon finds that time represents money and that it is equally as important to save one as the other. He sees that it is just as important to save an hour's work by man and team on an acre of oats as it is to get a yield of an extra bushel per acre and that it is more wasteful to have a team idle than to have one man idle for the same length of time.

Farm cost accounts will help to teach one that very often the largest yields may not pay. After closing the accounts the farmer usually gets many surprises. Often he finds that the enterprises which he thinks are the best and to which he devotes most of his time are being conducted at a loss, while the steadier, more common enterprises or crops may be the only ones that show profits.

The system of farm cost accounting outlined in the foregoing pages is not a theoretical system, but one which for several years, with many types of farming and under widely differing conditions, has given satisfaction. It is hoped that what has been written will furnish helpful suggestions to farmers who are keeping accounts and are not satisfied with the results obtained from their present system, and that it will be a guide to be followed by many others who wish to keep accounts but have not known how to make a beginning.

MOVABLE HOG HOUSES.

BY JOHN M. EVVARD AND J. B. DAVIDSON.

Bulletin No. 152, Agricultural Experiment Station, Iowa State College of Agriculture and Mechanic Arts.

Movable hog houses, properly built and used, are successful. Those described in this bulletin have stood the test at the Iowa Agricultural Experiment station. They are practical and satisfactory, and what is said concerning them and hog houses in general is based on years of thorough investigation and study of the housing of swine by the animal husbandry and agricultural engineering sections.

Proper housing is essential to successful swine production, and yet it is ofttimes overlooked. Dry, sanitary, comfortable conditions must be provided if one wishes the best returns in the pork producing business. The hog is not as well protected with natural covering as most domestic animals. He relies mainly on the production of thick layers of fat which provide considerable protection. All hogs are not so fortunate, however, as to be fat, hence they must depend upon their hair or bristle covering which is inadequate, even though abundant, in the zero days of winter. Sensible shelter, therefore, is in order because it saves feed, provides comfort, and, of course, saves money.

Swine are quite susceptible to the unfavorable influences of dampness, cold, heat and drafts. The new-born pig, farrowed in January, February, or March, must be intelligently housed in warm, dry, well ventilated quarters if good returns are to be expected.

THE ESSENTIALS OF AN IDEAL HOG HOUSE.

The satisfactory house for hogs should possess these requirements:

1. *Warmth:* The newly farrowed pigs especially demand protection. Early pig production is impossible without warm shelter. Stock hogs thrive best when they are not compelled to "shiver" from cold and thus burn up feed which would otherwise be converted into tissue. The wintering sow makes good use of a warm sleeping bed. In truth, all classes of swine demand reasonably warm shelter if maximum returns are expected. Sudden wide ranges of temperature are to be avoided.

2. *Dryness:* To expect thrift in damp, musty quarters is not logical. The dripping of condensed moisture from roof and walls is seriously objectionable. Metallic constructions are open to deserved criticism in this respect; wooden inside sheathing helps considerably. Masonry unless built with hollow air space is somewhat liable to cause this undesirable condensation. A dry, well-drained floor as well as dry, tight roof and walls are all essential.

3. *Abundance of light and direct sunlight:* Without sunlight we cannot have a profitable swine husbandry. It is the great and universal germ destroyer and kills disease-causing organisms. It promotes dryness, warmth, and ventilation, thus bettering hygienic conditions. Direct sunlight gives suckling pigs vigor and strength. Direct sunlight should

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Note.—Acknowledgment is made to C. E. Wright and A. W. Griffin for assistance in the preparation of the drawings.

strike each part of the interior of the house at some time during the day; and the pens should be well sunned, especially in the farrowing months of February, March and April. The forenoon sun has unusual value, coming as it does immediately after a relatively long, dark, and ofttimes cool and damp night, so weakening to young and suckling pigs. In the hot summer months some shade should be provided to ward off the direct sun.

4. *Shade:* The hog actually suffers more from the heat of summer than he does from the cold of winter; he should be protected from both. Feed is wasted in overcoming both extreme cold and severe heat. High temperature dulls the appetite so essential for profitable pork production. Hogs ofttimes die under the direct rays of the summer sun.

5. *Ventilation:* The hog demands an abundance of fresh, pure air; this may be easily provided without subjecting him to injurious drafts. Summer coolness is dependent largely on good ventilation. The hog suffers much in a closely confined, ill ventilated place because he is a productive animal that usually works at "top-speed"; especially is this true when fattening, hence he needs an abundance of untainted oxygen for his bodily functions.

6. *Sanitation:* To clean and disinfect a hog house thoroughly is often imperative; the building should be free from inaccessible cracks and openings to permit this. Smooth walls and floors without crevices are to be emphasized. Crevices harbor filth, which encourages disease; bacteria that cause hog cholera, contagious sore mouth, white scours, and other troubles; and parasites, such as lice, worms, and mange. Masonry construction offers superior sanitary advantages. Freedom from dust is absolutely necessary for successful sanitation. Dust encourages pulmonary afflictions, manifested by coughing, wheezing, sneezing, general lassitude, and discomfiture. Dust predisposes to pneumonia, so often fatal. Dust is likely to further worm infection of the lungs and alimentary tract, an avoidable bugbear of swine husbandry. The regular removal of litter and manure is encouraged and made easy by roof doors and gable windows in small hog houses. The more easily one can clean the house the more likely it is to be clean. Bear in mind that the hog is more liable than all other domestic animals to gather disease infection from unsanitary surroundings; he is so anatomically constructed that he always breathes, eats, and drinks close to the ground where infection abounds.

7. *Safety and comfort:* High doorsills frequently cause abortion. Rough, uneven floors cause much discomfort, particularly to the pregnant sow. Slippery floors result in many accidents. Narrow or low doorways through which swine must squeeze or crawl, are objectionable. Fenders that save the lives of suckling pigs are quite indispensable.

8. *Convenience:* House details may be arranged to lessen the time and labor required to care for the swine herd. What is considered as one man's convenience, however, may be an inconvenience for his neighbor. Yet the following suggestive features are all more or less valuable in hog house building:

Roof doors in small houses and alleys in large houses for quick and easy feeding, removal of litter or manures, and handling of herd.

Bins for storage of feeds.

Doors and windows which open or close easily and quickly.

Room for supplies and appliances, such as veterinary medicines and instruments, feed cooker, water heater, stove, sleeping cot and so on.

Abundant water supply for drinking and flushing.

Ventilators, readily adjustable.

Litter carriers for removing manure.

Shade devices, handily managed.

Attached runners, for quick moving of small houses.

Dipping tank, in or near house.

Troughs arranged so as to be filled and cleaned with dispatch without interference from hogs.

Feeding floor, located in or nearby the house.

Breeding crate and ringing chute under cover and near at hand, for winter service especially.

Tile drainage for flush water which may be conserved by running into farm liquid manure tank.

Minor equipment, such as hurdles, automatic waterers, self-feeders, barrel or other storage for slops, and other devices.

9. *Serviceability:* To be useful every day in the year means that a house must be suitable for farrowing time, for summer shade, and for winter protection. It is economical at times to use the hog house to shelter sheep, especially ewes with lambs, calves, or other domestic animals, thus adding to all around serviceability. However, that is not usually advisable. The more continuous service one secures the less the daily cost for shelter; to obtain a maximum of housing at a minimum of expense is the economic and practical objective goal.

10. *Sufficient size to shelter advantageously:* The capacity should be consistent with the number, weight and class of hogs to be housed in the various seasons. To avoid overcrowding, have plenty of floor and overhead space; ventilation and comfort is thus promoted.

11. *Durability:* A house must withstand wind, rain, hail, snow, temperature, and the daily wear and tear of actual usage, so as to endure for the greatest term of years. Fireproof construction lessens risk. In general, that building which gives the longest continuous service is the one which is most worthy of consideration.

12. *Reasonably low first cost:* This should be consistent with the service rendered.

13. *Minimum cost of maintenance:* This charge may be systematically compared in various types of construction by placing them on the basis of the cost per annum, per sow, per litter or per hog in general. A maximum of service for a minimum of upkeep charges is the ideal to work toward.

14. *Pleasing appearance:* A satisfactory house harmonizes with its surroundings, it is neat in architectural design and sensible in construction. Well chosen paint lends much to its attractiveness. In general, to add to, rather than detract from, the appearance of the farmstead should be the builder's ambition.

THE LOCATION OF THE HOG HOUSE.

The prospective site for the hog house should be carefully studied. Some of the more important considerations to be emphasized are:

1. *Economy of labor and time in management:* To save time and energy feed, water, and bedding should be near at hand. Locate so the house will fit in with the general scheme for doing farm chores. Unnecessary steps are profitably dispensed with.

2. *Sufficient drainage:* Rolling ground is unquestionably best for drainage, while low, level land is usually damp and unfit for swine. Sandy soils furnish a desirable base because water drains readily from them. Heavy clay or gumbo water-holding soils are to be avoided. Drain tile may often be used to advantage.

3. *Sunny exposure:* Select an open, well-sunned space because the direct sunlight must reach all portions of the house. Avoid the heavy shade of trees and other buildings.

4. *Southern slope:* The southern slope is preferable because of its warmth, which means much to the successful raising of suckling pigs. Warmth, dryness, and natural air drainage, all conducive to the best results with pigs are promoted by the southern slope.

5. *Protective windbreaks:* The extreme cold winds in Iowa come from the northwest. The most efficient site therefore should be to the southeast of a good, substantial windbreak of hills, trees, buildings, fences, or their happy combination.

6. *Nearness to pasture and summer shade:* Convenient pasture and shade are both indispensable for economical pork production.

7. *Suitable elevation:* The high situation is apt to be bleak, cold, and difficult of approach; the low, damp and unhealthy. The happy medium of elevation is indispensable for the good of both man and beast.

8. *Prevention of odors reaching dwelling:* Inasmuch as somewhat unpleasant odors may possibly be carried to the farm dwelling, the piggery should be a reasonable distance therefrom, and preferably not in the direction from whence the prevailing winds come.

9. *Lessened risk from disease infection:* Locations in close proximity to public highways, railroads, and open waterways, unless free from possible infection, are to be avoided. The neighbor's herd may carry infection; and that source of danger should be considered. A reasonably complete isolation of the swine herd is advantageous.

THE TWO TYPES OF HOG HOUSES.

Piggeries are of two general types, the large centralized community, or stationary, and the small, individual, or movable.

The centralized house generally contains a number of pens which may or may not have removable partitions. It is a comparatively large, elaborate, and durable structure. Undoubtedly there is much of merit in the centralized system of swine housing and management. Extensive investigations which cover the construction of this type of house have been and are now in progress at the Iowa Agricultural Experiment station; the results will be published later.

The individual house has but one pen, hence the name; this usually accommodates a sow and her litter. It is small, simply constructed, and comparatively durable.

The happy combination of the two types of houses, the centralized supplemented with the individual, finds favor in the practice of many most successful swine men. Each type of house has its own peculiar advantages and disadvantages, whereas the two together so counterbalance in their merits and demerits as to make a very efficient, practical system of swine housing. Our own experience and observation leads us to believe in the combination system.

The value of the individual housing system is recognized in a general way by many hog men; however, few realize and appreciate all the advantages thereof. A careful study of the advantages and disadvantages of this system will repay in that it will enable one to determine the adaptability of this type to local conditions.

ADVANTAGES OF THE MOVABLE HOUSE (COMPARED WITH THE CENTRALIZED).

The arguments for the movable house may be summarized as follows:

1. *Location may be changed when desired:* The movable feature is important. The house may be situated as demands vary so as to: (a) Provide easily accessible pasture; (b) furnish protection from the elements and disease; (c) be convenient to other buildings, water, and shade; (d) economize fencing when providing individual pasture for sows and litters, or other hogs; fenced lanes or runways are thus dispensed with; (e) encourage exercise, especially for pregnant sows and growing pigs; (f) be near common feeding floor; (g) supply shelter for hogs following cattle, other than that in general sheds; (h) afford housing for the sow that unexpectedly farrows in pasture or field; (i) render greatest possible service throughout the year. Adaptability to varying conditions insures a maximum of usefulness.

2. *Isolation may be secured quickly and conveniently:* The separation of swine from others of their kind is of special value at times because: (a) quiet at farrowing time is assured.

(b) Uniform development of the suckling pigs is encouraged; disturbances such as the troublesome squealing of pigs from other litters, and the clamoring of disgruntled sows are eliminated. Robbing being restricted within the litter, is reduced to a minimum. The isolation of swine in secluded pastures is an ideal method for the promotion of even development.

(c) Danger from loss is minimized. Spread of disease among the herd is retarded. Huddling, piling up, fighting and other unfavorable results are largely avoided.

(d) Developing boars may be segregated. The prevention of accidental breeding is thus brought about; in addition, conditions for development and prospective sale are bettered.

3. *Sanitation is promoted:* The movable house promotes health conditions in that:

(a) Surroundings may be changed to prevent infection by disease such as hog cholera, contagious white scours, infectious sore mouth, and others.

(b) Rotation of hog pastures and lots is easily and cheaply brought about, thus avoiding parasitic infestation, internal by worms (round, thorn-headed, tape, lung, pin, and others), and external by lice and mange).

(c) A proportionately greater amount of light may enter if the roof doors are fitted with sash lights as in the Iowa Movable Hog House.

(d) A more thorough airing and lighting is possible in that the roof doors, gable windows, sides, and general door may all contribute. These openings have an area which is proportionately greater in relation to the capacity than those in the centralized. It may be possible in the large type to provide as great a proportionate area of windows and doors, but hardly practicable.

(e) Floors are likely to be more dry and sanitary because the manure, both solid and liquid, is usually deposited in the lot or on the fields where needed. Of course when the doors are closed, preventing free exit of the hogs, this sanitary advantage is absent; likewise in very cold weather the hogs often manure in the house. Feeding and watering is usually done outside, this also tending to keep the swine healthier because of the drier, cleaner, more sanitary floor and bedding.

(f) Dust is not so liable to be a menace where dirt floors are depended upon; mere moving solves the difficulty.

(g) Quarantine of acquired animals may be efficiently enforced. The small movable house with dirt floor is a convenient and effectual detention hospital.

4. *Construction is simplified:* Some features which save time and energy are: (a) pig saving fenders are not necessary on the sides of the "A" shaped type because of slanting roof; (b) permanent foundations are dispensed with; (c) the building can be constructed under cover, thus avoiding the cold weather of winter and hot sun of summer; (d) the location need not be determined definitely because of the movable feature; (e) prospective planning as to methods and details of construction is reduced. Building of the small, individual houses may be done quickly by anyone having a working knowledge of carpentry. Many Iowa boys have successfully built the individual hog house.

5. *More practical and economical for beginners and owners of small herds:* Requires but a small initial outlay because of low first cost. The prospective swineman is thus enabled to gradually add to his housing facilities as his herd increases.

6. *Adaptability to the renter:* Being a movable, economical unit, the man who rents can better afford this type than the larger one, should the landlord not care to furnish hog houses. The knock-down style makes it easy to transport in compact form.

7. *Artificial heat in few pens easily supplied:* In ordinary weather the animals furnish sufficient warmth; however, when extreme cold prevails provisions for heating is in order. The common barn lantern usually provides sufficient warmth, but sometimes the small kerosene heating stove may be advantageously pressed into service.

8. *Fire risk is lessened:* Isolation of the small houses insures slight risk from fire. Furthermore the danger to other buildings is minimized.

9. *Supplements the centralized house:* The combination of the centralized stationary and the individual movable furnishes a most complete system. One house is hardly sufficient no matter how large; it lacks adaptability necessary to meet all of the demands and needs of the swine herd. To have the sows farrow in the centralized, and then transfer them with their litters to the individual houses in from two to five weeks, depending upon the weather and other local factors, is a commendable, sane, and practical method of procedure. Such a successful system is followed quite widely in the middle west. The general appearance of the farmstead is improved by a well chosen arrangement of both types.

DISADVANTAGES OF THE MOVABLE HOUSE (COMPARED WITH THE CENTRALIZED).

The arguments against the individual house are given:

1. *Time and labor required greater:* More energy and time are needed because facilities for feeding, watering, dipping, ringing, castrating, marking, breeding, and weighing are not so convenient. To have all sows under one roof during farrowing season contributes much to the efficiency of labor.

2. *Durability less:* The movable feature has its drawbacks in that it somewhat reduces the years of service. Masonry construction, so desirable because of its durability, cannot be used with practicability.

3. *Feed storage and fresh water supply impractical:* Convenient indoor bins of feed and taps for water are most desirable. A mixing room with feed cooker and other appliances adjacent to the feeding alley is not possible. If the individual houses are permanently located, especially in a group, these disadvantages may be largely disposed of; storage within the small house is rarely practiced.

4. *Exposure for herdsman greater:* The caretaker is compelled to work outdoors regardless of weather conditions.

5. *Close attention to herd impossible:* At farrowing time especially, vigilant attendance to the herd is of great importance; with sows under several roofs this becomes very difficult.

6. *Heating several pens difficult:* To keep heat uniform in several houses is troublesome because the many lanterns or small heaters, as well as the ventilators, require constant care.

7. *Lighting apt to be deficient:* Movable houses are usually constructed with little provision made for lighting; this defect is overcome in the Iowa individual house with roof sashes.

8. *Ventilation not as systematic:* The ventilators are usually not adjustable. The house presents a greater possibility of introducing the principles of the King System of ventilation. Furthermore, the overhead space is generally less, requiring a more frequent changing of air.

9. *Site selection more complex:* One site is more easily picked than several, as is necessitated with many individual houses.

10. *Common feeding floor not so likely to be used:* The movable houses are not likely to be attached to the floor for feeding and because it is somewhat troublesome to move them to the floor, the tendency would be to feed on the ground.

11. *Danger greater when grouped:* Huddling and piling up is to be carefully guarded against when several individual houses are assembled in a common yard; under such circumstances the hogs tend to crowd into a few houses rather than to distribute themselves evenly among all.

12. *Secluded swine fight more when herded:* Isolated swine, especially sows, when turned together quarrel considerably, resulting in various injuries, loss of flesh, and sometimes death.

13. *Sanitation may be discouraged:* Masonry construction which has much sanitary merit is precluded from the materials used for building. The removal of manure from the houses to the fields, other things being equal, is more likely to be neglected in that it is a greater task to gather it from several sources than one. Steel rail litter carriers are not practical in small houses.

14. *Equipment usually larger:* To facilitate the work of feeding and watering, a horse and low wagon, or stone boat with its extra barrels or tank is quite essential, especially when the houses are widely distributed.

15. *Advertising value less:* The general appearance of a few, or even several individual houses, is not so impressive as that of the more elaborate, centralized house or a combination of the two types.

TYPES OF MOVABLE HOUSES WITH DESCRIPTION.

A large number of movable houses have been erected by the animal husbandry and agricultural engineering sections. Many of these differ simply in the arrangement of doors, shade lifts, ventilators, and windows. It is unnecessary to describe all of the different houses investigated, but the details of construction of six distinct types with suggestive modifications is given here.

These houses have proven satisfactory in general service, but the special adaptations of the different types are dependent upon local conditions.

The movable types of which photographs are shown, specifications drawn, working drawings presented, etc., are:

I. Iowa Gable Roof House.
II. Ames Combination Roof House.
III. "A" House—(Doors Hinged at Side).
IV. "A" House—(Doors Hinged at Top).
V. Tepee House.
VI. Economy House.

THE IOWA GABLE ROOF HOUSE.

The Iowa gable roof house has for many years been successfully used by the Iowa Agricultural Experiment station. It is simple of construction and presents a very attractive appearance. (See figs. 1, 2, 3, 4, 5, 6, 7 and 8.) Some of its good features are: The perpendicular walls enable the floor space to be utilized to good advantage, permit of shade and airing doors, make possible considerable of overhead space, add substantially to the general attractive appearance, and encourage ease of moving.

In moving houses with upright walls a very successful method of procedure is to take a strong heavy rope, throwing it entirely over and around the house so that it is snug up against the walls; fasten same to a clevis, hitch a team on, and take the house where wished.

The framing structure of the Iowa house is rigid and substantial, this insuring durability.

The roof doors, preferably placed on the east or south roofs and attached at the side, enable one to open the house for sunlight and aeration, thus increasing sanitation.

The entrance door may be placed either in the front end or in the side of the house, according to the wishes of the herdsman; the location of the door in the "A" house has the disadvantage in that it must necessarily be placed in either end.

CONSTRUCTION DETAILS.

In the building of movable hog houses there are a number of features of construction which should be thoroughly understood; these follow:

1. *RUNNERS.*

The runners or skids provide the foundation of the movable house. The runners should be of sufficient dimensions (4x4 of the more durable woods like fir and cypress are good) to hold the house well off the ground. The use of short-lived 2-inch material, which decays when placed in contact with ground, cannot be advocated. Shoeing the runners with steel of about the thickness of the ordinary farm wagon tire is sometimes practiced, but this is quite expensive and hardly worth the extra cost; in truth, unless the houses are moved very often they are of scarcely any advantage.

Concrete runners have been quite successful when constructed so that they may be fastened to a floor by means of an attached dimension piece placed lengthwise thereon. These concrete runners commend themselves when a large number of houses are to be built, inasmuch as the cost of making is thereby decreased considerably in that the initial expense for forms and other concrete making accessories is distributed over more runners.

2. *FLOOR.*

All of the houses described, with the exception of the "Economy," have 2-inch floors. If desired, 1-inch material may be used if joists are used to stiffen the floor. The use of inch material somewhat reduces the cost of the house; generally speaking, however, the 2-inch floor is preferable.

The material which enters into the construction of the floor should be resistent to decay. White or yellow pine, No. 1, is figured on the bills of material; the white is more satisfactory than the yellow, especially if the ground is damp. Many of the experiment station houses have floors made of fir, a very substantial durable wood, but fir is somewhat more expensive, although better, than pine under average Iowa conditions. A few hemlock floors have also been used with fair satisfaction; the hemlock gives good service if not kept in contact with the ground.

One can do without wooden floors if wished, the cost of a 6x8-foot house being decreased thereby about $3.00, or actually with $30 lumber, $2.88; the cost of laying the floor would also be eliminated.

Earth floors kept dry, free from dust, and sanitary, are most excellent in summer as well as in winter if the houses are well banked to prevent under drafts.

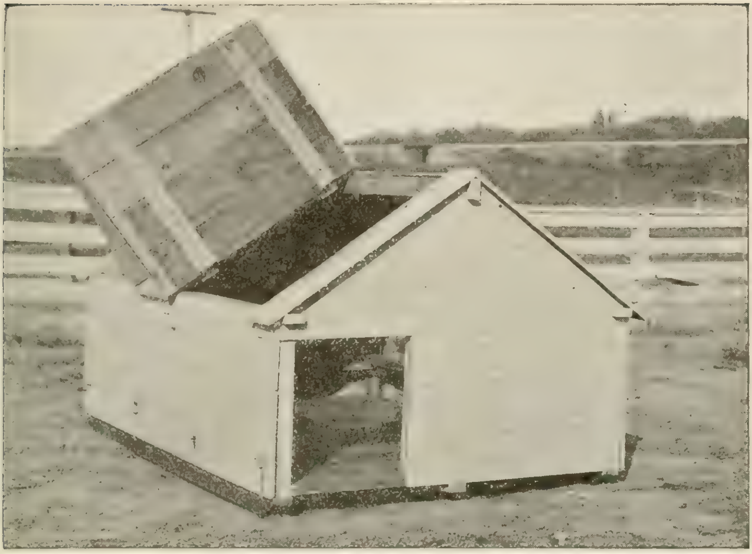

Fig. 1. Iowa Gable Roof House. Front view; partially open. Shown without ventilator; see Fig 2.

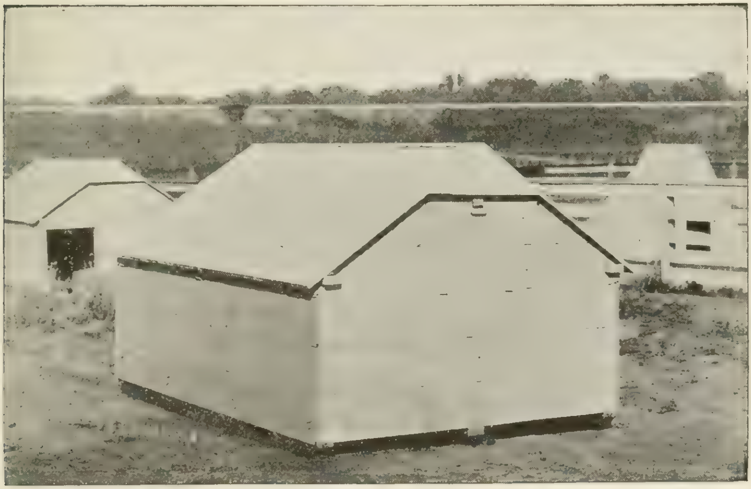

Fig. 2. Iowa Gable Roof House. Rear view; closed. Note improved peak ventilator.

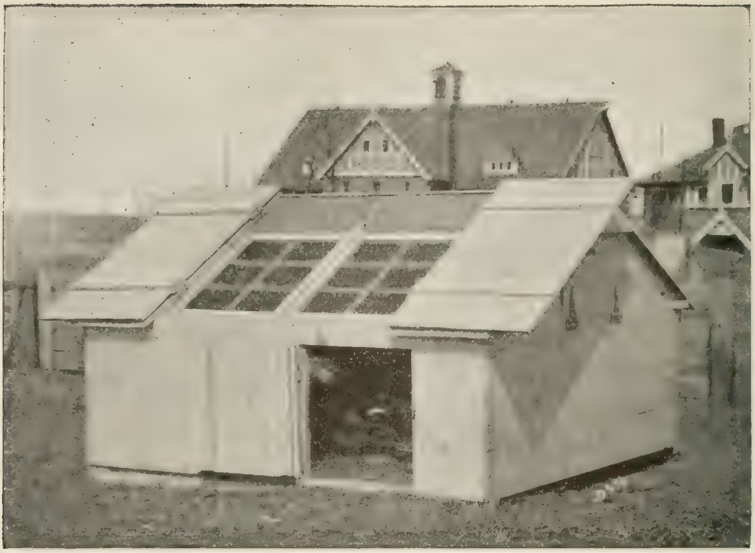

Fig. 3. Iowa Gable Roof House in Spring and Fall. Front and End view, showing doors on south; arranged for sunshine.

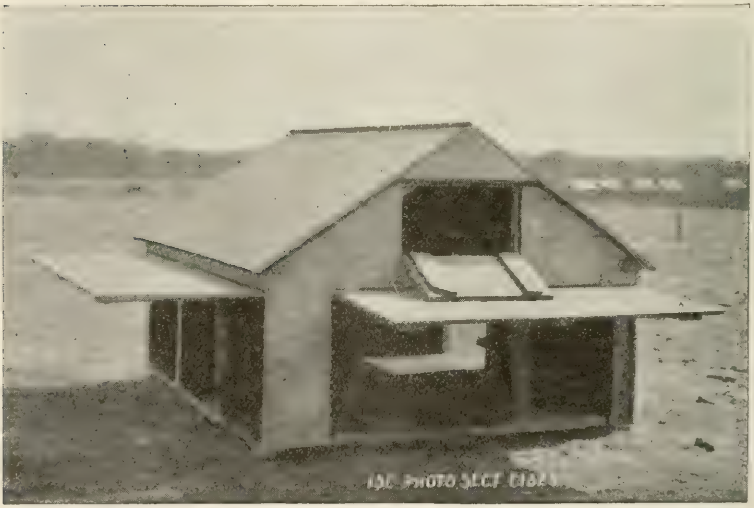

Fig. 4. Iowa Gable Roof House in Summer Service. Side and End view, doors open; arranged for shade.

3. *FRAMING.*

The design submitted is of a rather substantial frame built of 2x4-inch material. It is entirely possible to build this house with much less framework, but the more substantially built house is desirable. White or yellow pine, No. 1 or No. 2, may be used in the framework. The construction of the frame is clearly shown in the drawing.

Wind braces in the roof framing on the slope opposite the hinged roof doors are quite essential in that they prevent distortion when the house is moved; they likewise add much to the general rigidity of the roof, thus insuring that the doors fit more closely.

4. *SIDING AND ROOF.*

The Iowa house is covered with 10-inch shiplap which is tight and sheds water quite satisfactorily. White pine No. 2 is recommended for both the roof and sides inasmuch as it stands the weather to great advantage, not shrinking so as to necessitate the addition of battens, nor emitting a rosin which is not only disagreeable to the herdsman but causes the paint to peel. Some of the station house roofs were made of yellow pine; it was not long before cracks appeared between the boards because of their shrinkage, thus necessitating the addition of battens. If so desired the white pine roof can also be battened but this is hardly necessary unless roofing boards (not shiplapped or grooved) be used.

If an exceptionally warm house is demanded one can use double siding and roofing with interlaid tar paper; ordinarily, however, this is unnecessary under Iowa conditions.

5. *DOORS.*

Location, size, and general character of the doors mean much to the convenience of the hog house. There are entrance, end, and shade doors each of which deserves mention.

A. Entrance Door.—This door may be placed in the middle of the gable end, or near one corner of the end or side. The corner location, whether it be in the side or end, is the best because the swine are better protected from drafts and storm, and bedding is not so apt to be blown or carried out. The size of doorway called for in the original plans, 22x26-inch, may be made larger, higher especially, by building the sides higher, say 6 inches or so. Some of the large breeds demand higher doorways than specified.

The southeast corner door makes it possible for the direct rays of the early morning sun to fall upon the floor of the inner house, thus promoting growth and general vigor of the pigs.

When the door is at the corner it is necessary that hinges be used for attachment whereas the central location enables one to have the more serviceable sliding door which is firmly held in place by guides and easily fastened with a solid, substantial pin or bolt.

A piece of burlap hung over the doorway furnishes an automatic door but its serviceability is short. Another sort of automatic door may be made by means of straps (ropes or heavy dog chain may be used) and light pieces of about 1x2-inch or 3-inch dimensions. Simply nail the straps down on both ends of the previously arranged 1x2's or 1x3's sawed to fit the doorway horizontally, and placed side by side. The straps must extend beyond the combination of pieces so as to enable attachment to be made to the casing above the doorway from which the door swings. This door may be made of rope by boring two holes in both ends of the cut cross pieces and then weaving the rope therein. Generally, however, the more rigid doors are to be advised because of their durability and other obvious advantages. With the automatic doors described the hogs are not easily shut in or kept out of the house.

B. Roof Doors.—Doors in the roof economize management of the swine; in addition they permit the interior to be thoroughly sunned and ventilated. The roof doors had best be on the east side of the houses which have the entrance door on the south end; this is in order to take advantage of the successive early morning and forenoon sun. When the entrance door is in the east corner of the south side wall (see fig. 3) the roof doors should be on the south or sunny side.

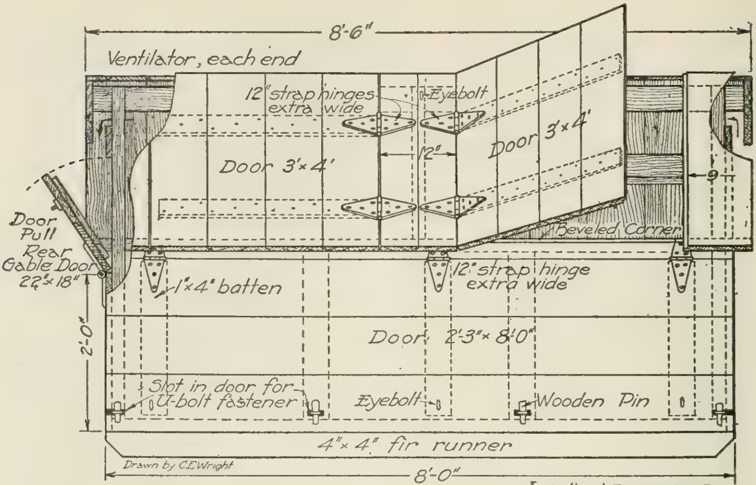
8'-6"
Ventilator, each end
12" strap hinges extra wide
Eyebolt
Door 3'×4'
12"
Door 3'×4'
9
Beveled Corner
Door Pull
Rear Gable Door 22"×18"
1"×4" batten
12" strap hinge extra wide
2'-0"
Door 2'-3"×8'-0"
Slot in door for U-bolt fastener
Eyebolt
Wooden Pin
4"×4" fir runner
Drawn by C.E.Wright
8'-0"

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Fig. 5. Iowa Gable Roof House. Side elevation.

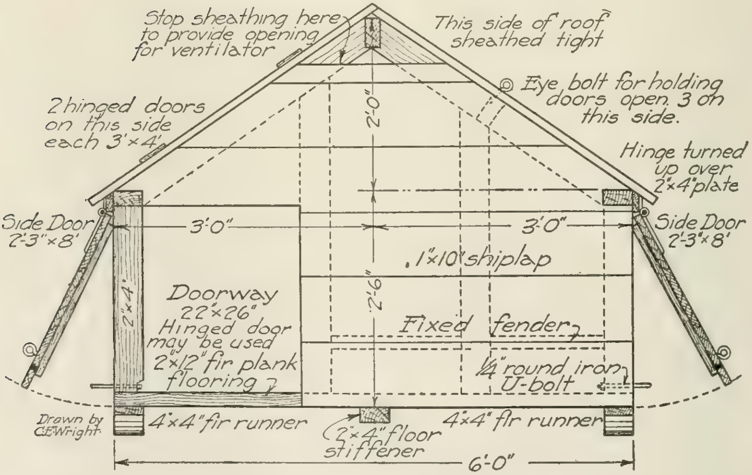
Stop sheathing here to provide opening for ventilator
This side of roof sheathed tight
2 hinged doors on this side each 3'×4'
Eye bolt for holding doors open 3 on this side.
2'-0"
Hinge turned up over 2"×4" plate
Side Door 2'-3"×8'
3'-0"
3'-0"
Side Door 2'-3"×8'
1"×10" shiplap
2"×4"
2'-6"
Doorway 22"×26" Hinged door may be used
Fixed fender
2"×12" fir plank flooring
¼" round iron U-bolt
Drawn by C.E.Wright
4"×4" fir runner
2"×4" floor stiffener
4"×4" fir runner
6'-0"

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Fig. 6. Iowa Gable Roof House. Front end elevation. If larger doorway is wished make sides higher.

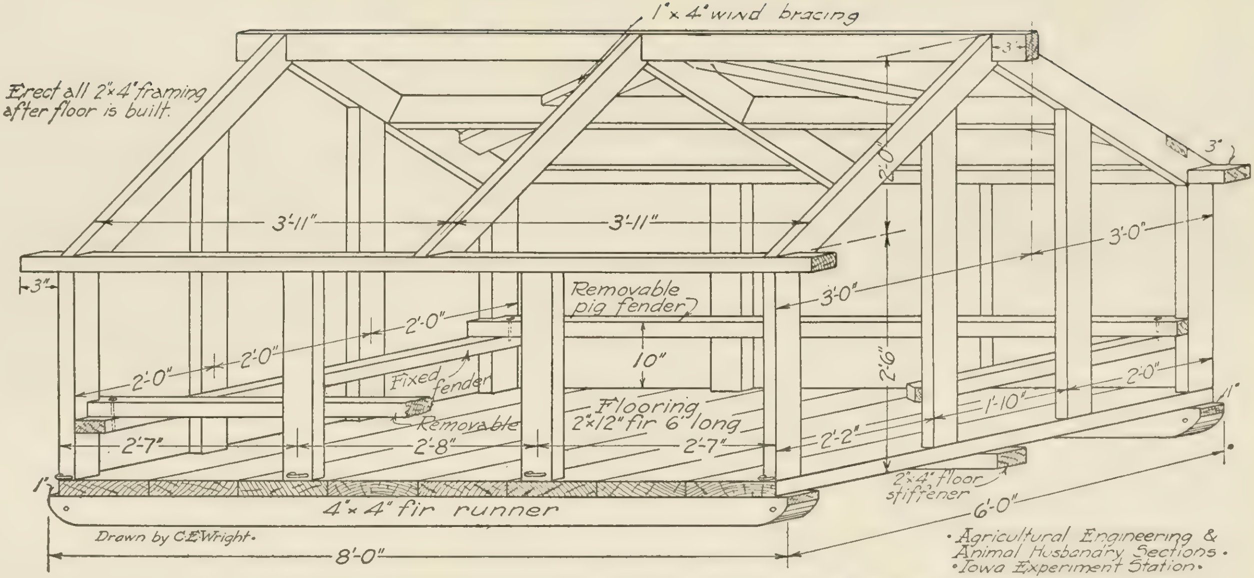
1"×4" wind bracing
Erect all 2"×4" framing after floor is built.
3"
3"
3"
3'-11"
3'-11"
2'-0"
3'-0"
3'-0"
Removable pig fender
10"
2'-6"
2'-0"
2'-0"
2'-0"
2'-0"
Fixed fender
Removable
Flooring 2"×12" fir 6' long
1'-10"
2'-2"
2'-7"
2'-8"
2'-7"
1"
1"
2"×4" floor stiffener
4"×4" fir runner
6'-0"
8'-0"
Drawn by C.E.Wright.
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Fig. 7. Iowa Gable Roof House. Perspective showing framing details.

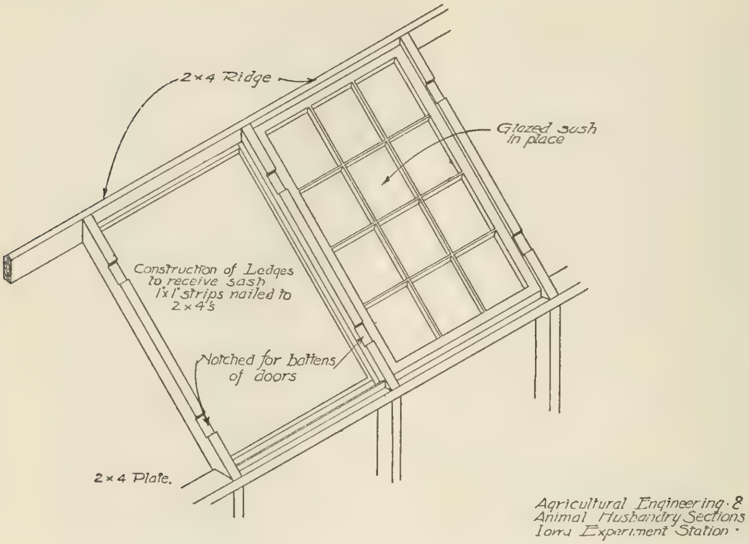
2×4 Ridge
Glazed sash in place
Construction of Ledges to receive sash 1x1" strips nailed to 2×4's
Notched for battens of doors
2×4 Plate.
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Fig. 8. Sash for Admitting Sunlight During Cold Weather. Drawing showing sash in place.

The roof doors may be hung at the side (see figs. 1 and 15) or at the top (see figs. 10 and 23). The side attachment allows of a maximum of sunning and convenience, whereas when hung at the end considerable shade is possible. The top hinged doors may be arranged so as to be turned back upon the opposite roof, thus enabling the herdsman to attend to the swine without a troublesome door overhead.

The arrangement of window sash in the doorways of the roof is a commendable feature (see figs. 3 and 8); especially is this true when early pigs are farrowed: It is entirely optional with the builder as to whether or not the sash be included. The window sash are best made removable so as to avoid accidental breakage when not in use. When the houses are moved the stresses may be such as to twist the window frames and crack the glass. The sash should fit snugly to avoid leakage. Standard size sash are preferable as they are more economically purchased than when made to special order. In general the glass sash in roof are of much service in the winter, early spring and late fall. It is quite surprising to the novice to find how much warmer the house is when fitted with glass than when not. One can secure an abundance of sunshine without cooling the house by opening the doors—a necessary procedure when sunshine is wished in houses not equipped with sash.

C. End Small Doors.—To provide ventilation and furnish means for a convenient method of observing the swine the small end doors usually placed well toward the comb are a valuable addition; these, properly located, may be made of glass.

D. Shade Doors.—Swine demand and must have protection from the hot summer sun; the shade doors solve the problem of furnishing a warm, dry, airy place for rest and comfort. These doors had best be thoroughly re-enforced at the hinges to insure stability and service.

6. *FENDERS.*

For the protection of pigs at farrowing time fenders may be provided on the sides and ends of the house. A satisfactory protective fender is made by fastening 2x4-inch pieces flatwise six inches from the floor. If the sides of the house are made into shade doors the fenders along these sides should be made detachable. The removable fenders can be so cut as to fit in place upon the end fenders, which are securely spiked in place, and held firmly thus with an easily withdrawn bolt or spike.

7. *VENTILATORS.*

A satisfactory scheme of ventilation is provided by leaving an opening of moderate size beneath the ridge pole, protected by nailing a wide triangular board under and flush with the edge of the extending roof boards. The wind is prevented by this arrangement from sweeping through the house. A large ventilator may be provided throughout the length of the entire ridge by leaving an opening of two inches or so, protecting same with a false comb. Sometimes the smaller movable houses need a maximum of ventilation to insure dryness and fresh air, hence this suggestion. However, the use of the extended ridge ventilator necessitates that the roof doors be cut short at the top so as to easily clear the false protective comb.

8. *PAINTING.*

Not only will the expense in painting the wooden movable house prove a good investment in prolonging the life of the building, but it adds sufficiently to the appearance of the house to justify the expenditure. Any good outside paint will be satisfactory, but two coats should be given to insure that the wood be thoroughly covered.

Some successful swine raisers practice the spraying of their hog houses, both inside and outside, with creosote oil or other similar preservative liquid. These liquids not only preserve the wood, but also act as disinfectants; they help especially in the eradication of lice and mange. Creosote oil stains the wood black and sometimes makes it streaked, thus possibly making its use objectionable from the standpoint of appearance.

THE AMES COMBINATION ROOF HOUSE.

The combination roof hog house (see figures 9, 10, 11, 12 and 13) is built with doors in the roof so as to provide a maximum of direct sunlight. The walls are higher than those of the Iowa gable roof type house. The higher the walls the more building material is required, hence the more expensive the house. However, there is more room in such a house for an attendant.

The drawings and figures indicate clearly the arrangement of doors and general details. The materials and construction details are similar to those of the Iowa gable roof house.

THE "A" HOUSE (DOORS HINGED AT SIDE).

The "A" house is a simple structure (see figures 14, 15, 16, 17, 18, 19, 20, and 21), which can be easily and quickly erected. The "A" type has proven to be very satisfactory; it is strongly recommended by a vast number of practical swine men.

The slope of the roof is such as to obviate the necessity for protective interior fenders along the sides; they are needed across the end.

The specifications submitted call for a very substantial frame with a two-inch floor. A lighter frame may be used if one wishes to reduce the cost. The substantial construction is much more durable and satisfactory, and it is to be recommended.

The dimensions of the "A" house may vary considerably. The detailed plans (see figures 16, 17 and 18) show a house 6'x8' in floor size with the ridge a little over 6' from the floor. With this style of house if the peak is made lower than 6' it will be necessary to use a swinging door hinged at the top because the lower house will not permit the sliding door to be raised high enough. The Economy house (see figures 32, 33, 34 and 35) is built with a 5'x7' floor size, with the ridge 5' from the ground. This is also a satisfactory size but it is to be remembered that the Economy house as presented is doorless. In choosing a certain dimension one must figure closely, among other things, on the size of house which will insure that the lumber entering into the construction thereof shall be cut with a minimum of waste.

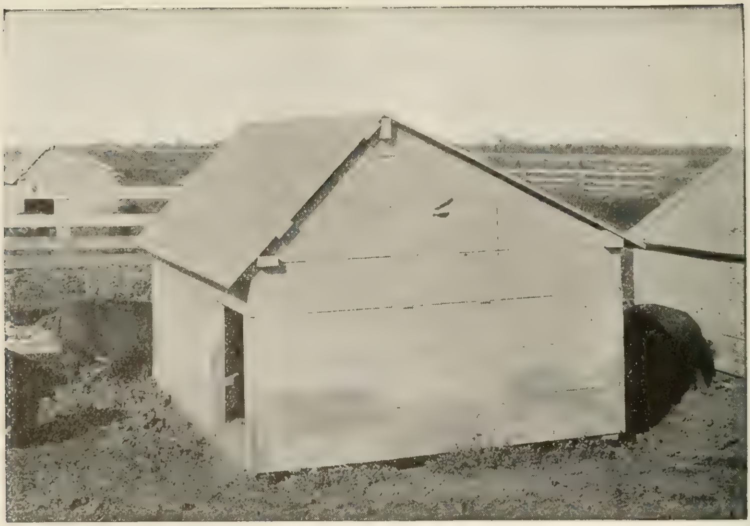

Fig. 9. Ames Combination Roof House. Front and End view; closed. Door in side; compare to Fig. 10. Improved ventilators may be placed at peaks; see Fig. 2.

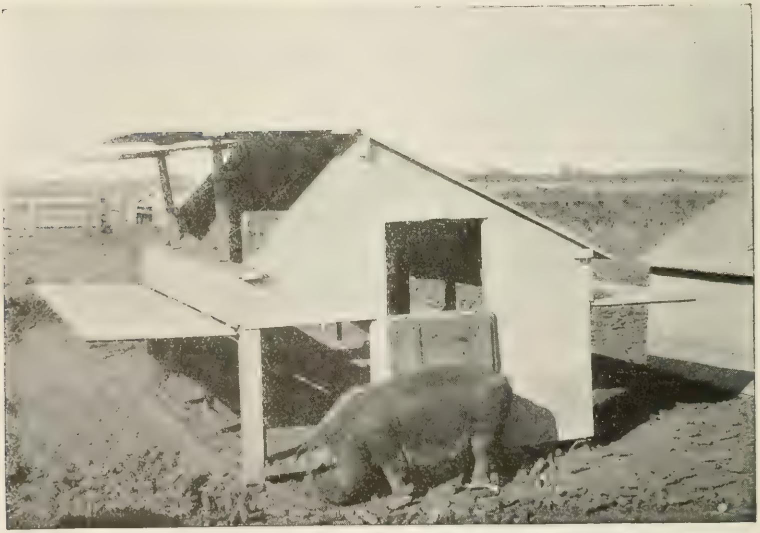

Fig. 10. Ames Combination Roof House. Side and Front view; all doors open.

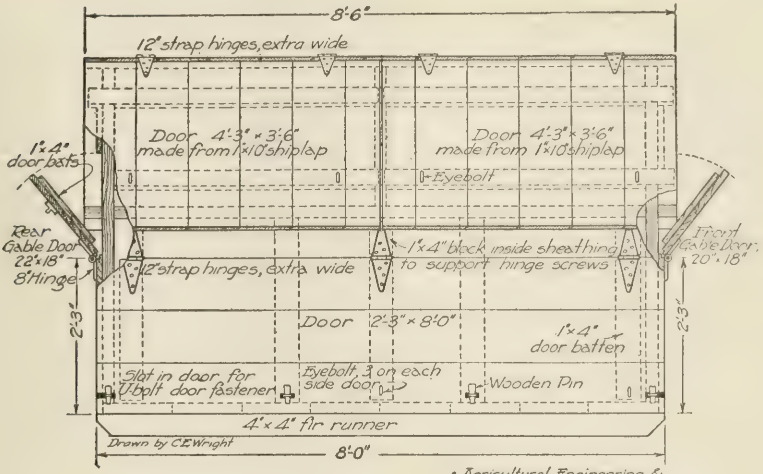
8'-6"
12" strap hinges, extra wide
Door 4'-3" × 3'-6" made from 1"×10" shiplap
Door 4'-3" × 3'-6" made from 1"×10" shiplap
Eyebolt
1"×4" door bats
Rear Gable Door 22"×18"
8" Hinge
1"×4" block inside sheathing to support hinge screws
Front Gable Door, 20"×18"
12" strap hinges, extra wide
Door 2'-3" × 8'-0"
1"×4" door batten
2'-3"
2'-3"
Slat in door for U-bolt door fastener
Eyebolt, 3 on each side door
Wooden Pin
4"×4" fir runner
Drawn by C.E.Wright
8'-0"

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Fig. 11. Ames Combination Roof House. Side elevation.

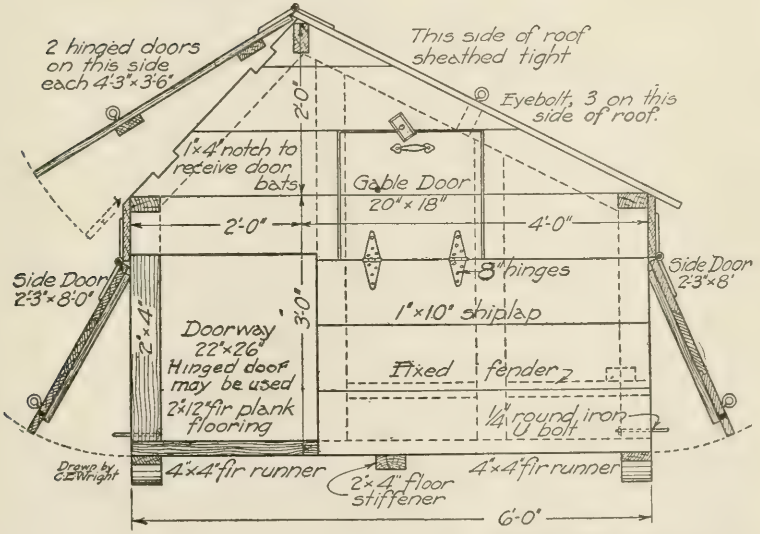
2 hinged doors on this side each 4'-3"×3'-6"
This side of roof sheathed tight
Eyebolt, 3 on this side of roof.
2'-0"
1"×4" notch to receive door bats
Gable Door 20"×18"
2'-0"
4'-0"
Side Door 2'-3"×8'-0"
Side Door 2'-3"×8'
8" hinges
2"×4"
3'-0"
Doorway 22"×26" Hinged door may be used
1"×10" shiplap
Fixed fender
1/4" round iron U bolt
2"×12" fir plank flooring
Drawn by C.E.Wright
4"×4" fir runner
2"×4" floor stiffener
4"×4" fir runner
6'-0"

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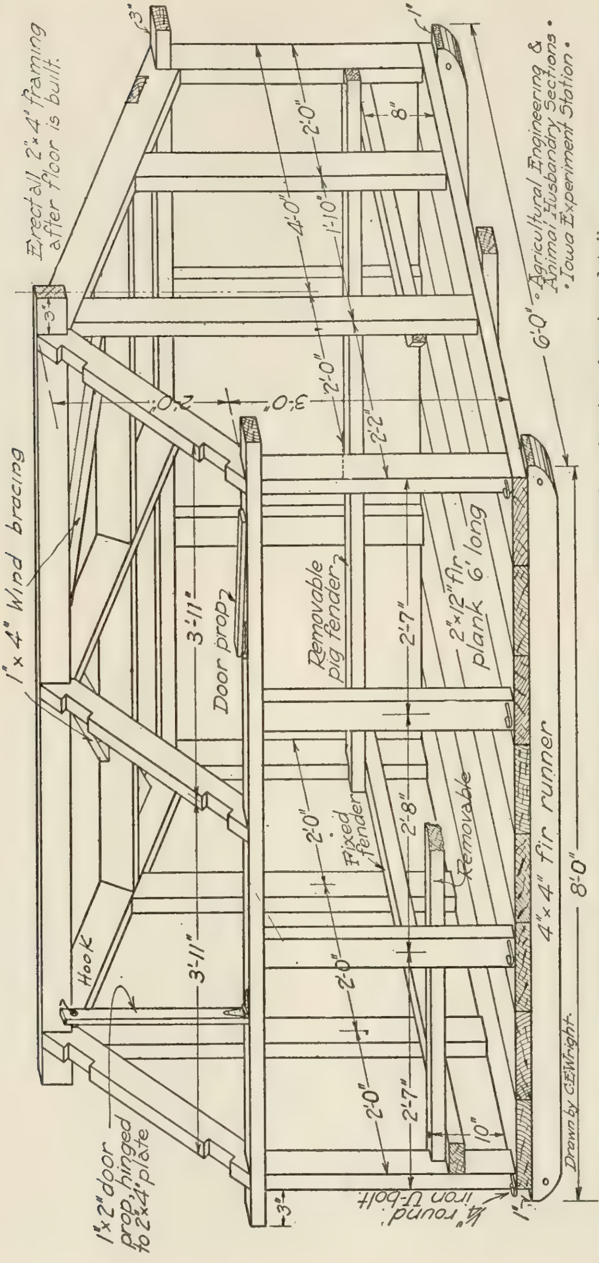
Fig. 12. Ames Combination Roof House. Front end elevation.


Erect all 2"×4" framing after floor is built.
3"
3"
1"
1"×4" Wind bracing
Hook
1"×2" door prop, hinged to 2"×4" plate
3"
2'-0"
3'-0"
4'-0"
2'-0"
1'-10"
8"
2'-0"
2'-2"
3'-11"
3'-11"
Door prop
Removable pig fender
2'-7"
2"×12" fir plank 6' long
2'-0"
Fixed fender
2'-8"
Removable
2'-0"
2'-0"
2'-7"
10"
¼" round iron U-bolt
1"
6'-0"
8'-0"
4"×4" fir runner
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Drawn by C.E.Wright.

Fig. 13. Ames Combination Roof House. Perspective showing framing details.

The doors may be differently arranged depending upon local conditions, the preferable sliding entrance door is pictured in figures 14, 15, 17, 20 and 21, whereas the swinging top hinged door is shown clearly in figure 19. It may be advisable to put three hinges, thoroughly reinforced with battens, on doors that swing at the top in order to make them more durable.

If entrance door larger than 22″x26″ is desired for tall swine, make house higher and wider to allow for same.

Manifestly one disadvantage of the "A" house is that there is but little practical choice in the selection of a door site. It must necessarily be placed in the lower middle of the ends.

The side, shade or sun doors had best be on the east side when the entrance door faces the south, or on the south side if the entrance is on the east. With such doors on the east advantage is taken of the early morning sunshine, which is much more effective than from the afternoon sun when one is sheltering suckling pigs.

It is quite desirable to sometimes make the side doors double (see figures 20 and 21) in that one can close the lower portion to facilitate the handling of sow and pigs. The double doors are shown wholly and partially open in the self-explanatory photographs (see figs. 20 and 21).

The ventilators may be constructed in various manners. The improved ventilators as constructed in the gable ends just under the comb of the house (see figure 14) are satisfactory in that they give systematic ventilation and present a very attractive appearance. Another type consists of a false comb or small cap which fits the opening in the ridge near the middle point (see figure 19). This false comb or cap may be made to extend throughout the entire length of the house, but care should be taken in fitting the side roof doors to allow sufficient clearance. All of these ventilators are efficient.

The serious disadvantage of the "A" type of house is that it does not effectively furnish shade on the hot days of summer. To offset this disadvantage we are presenting an "A" house with side doors hinged at the top (see figs. 22, 23, 24, 25 and 26), a house which is somewhat better for summer than the regular "A" type house just described.

"A" HOUSE (DOORS HINGED AT TOP).

This type of house differs from the other "A" house presented in that the side doors are hinged at the top in order to provide shade. (See figures 22, 23, 24, 25 and 26.) This type of house is used in the South, being somewhat similar to design proposed by the Mississippi Experiment Station.

If one wishes an "A" house to be constructed so as to provide some shade this method of hinging the doors seems to be the only favorable solution. . One cannot satisfactorily hinge the ends so as to form a horizontal shade device as in the Iowa and Ames types because one end is broken by a door and the other is usually on the north side where shade is already present. If the "A" house faces the east then such a shade-lift provision may be made on the west end. The side door hinged at the top is not as effective a shade device as the horizontal shade doors on the Iowa gable and Ames combination roof types. One is compelled to maintain the doors at too great a distance from the ground, thus reducing the shaded area, furthermore most of the front portion of the house when facing the south is not protected from the direct rays of the sun. The shaded area is likewise quite variable, moving as it does in accord with the circling sun.

The heavy shade doors are somewhat unhandy to manipulate and do not easily permit of sunning of the interior of the house so essential in the raising of early spring and late fall litters. Taking everything into consideration, however, this type of shade construction in the "A" house is as efficient as any so far proposed.

The side doors are best held up by means of supports which are firmly attached to the rafters of the frame by means of bolts (see figure 26). It may be advisable to attach the top end of these supports while in service temporarily to the roof shade door in order to keep same from lifting when strong winds blow. The shade doors may be held up by means of heavy wires attached to eye bolts in the ends of the doors and close to the ridge of the roof, but one

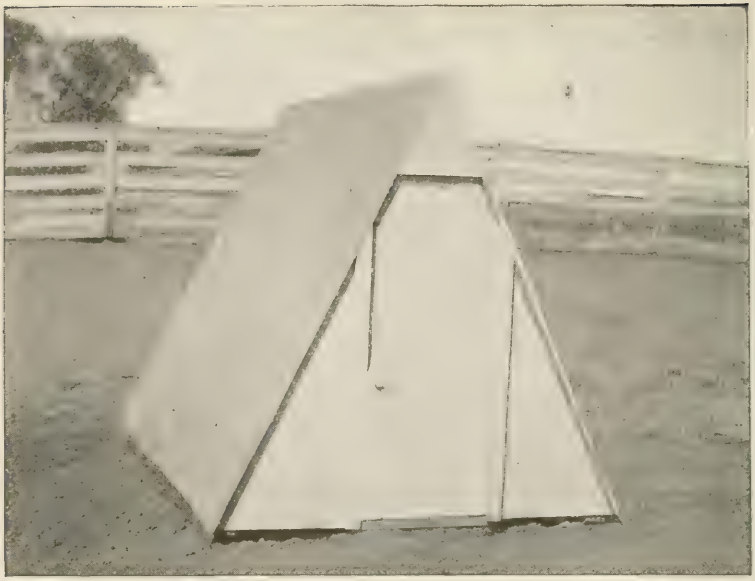

Fig. 14. "A" House (Doors Hinged at Side). Side and Front view; closed.

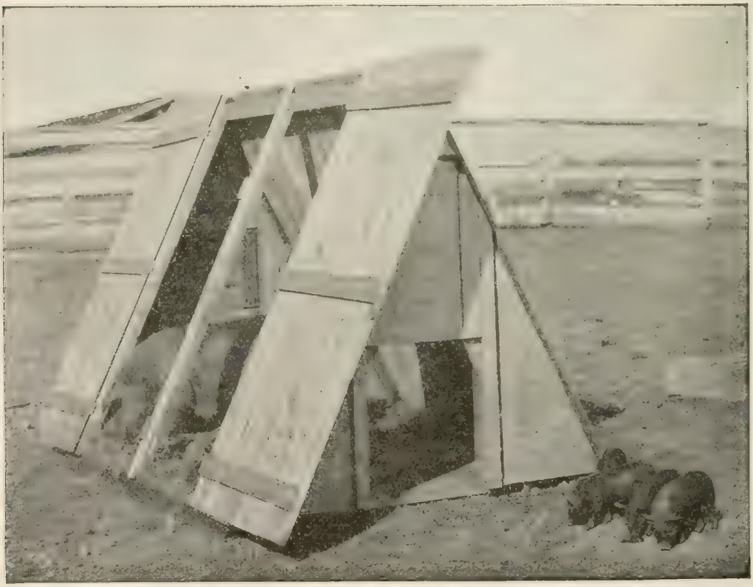

Fig. 15. "A" House (Doors Hinged at Side). Side and Front view; all but rear door open. Side doors are preferred on East Roof when entrance door faces South.

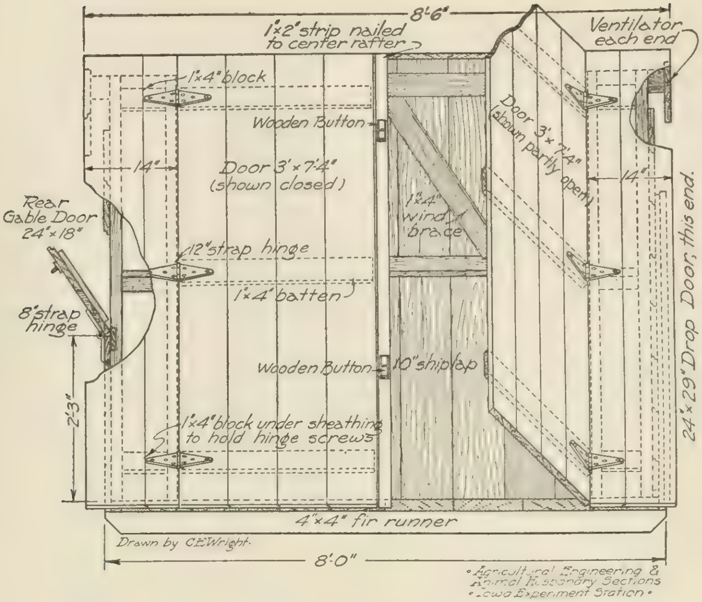
8'-6"
1"×2" strip nailed to center rafter
Ventilator each end
1"×4" block
Wooden Button
Door 3'×7'4" (shown closed)
14"
Rear Gable Door 24"×18"
12" strap hinge
1"×4" batten
8" strap hinge
2'-3"
Wooden Button
10" shiplap
1"×4" block under sheathing to hold hinge screws
1"×4" wind brace
Door 3'×7'4" (shown partly open)
14"
24"×29" Drop Door, this end.
4"×4" fir runner
Drawn by C.E.Wright
8'-0"
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Fig. 16. "A" House (Doors Hinged at Side). Side elevation.

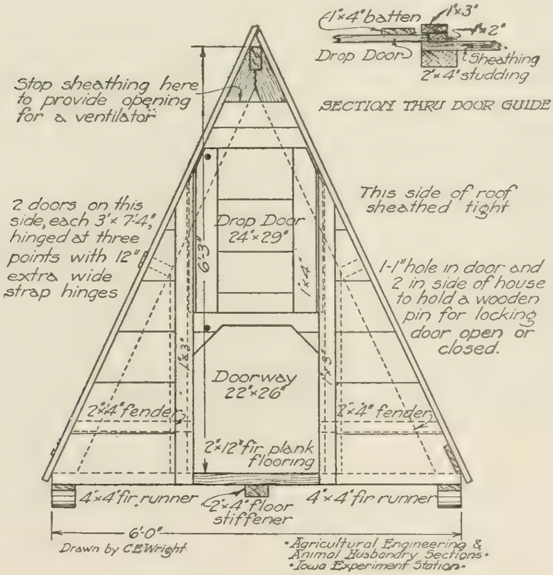
1"×4" batten
1"×3"
1"×2"
Drop Door
Sheathing
2"×4" studding
SECTION THRU DOOR GUIDE
Stop sheathing here to provide opening for a ventilator
This side of roof sheathed tight
2 doors on this side, each 3'×7'4", hinged at three points with 12" extra wide strap hinges
Drop Door 24"×29"
6'3"
1"×4"
1-1" hole in door and 2 in side of house to hold a wooden pin for locking door open or closed.
1"×3"
1"×3"
Doorway 22"×26"
2"×4" fender
2"×4" fender
2"×12" fir plank flooring
4"×4" fir runner
2"×4" floor stiffener
4"×4" fir runner
6'-0"
Drawn by C.E.Wright
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Fig. 17. "A" House (Doors Hinged at Side). Front end elevation. To make doorway larger build house higher and wider.

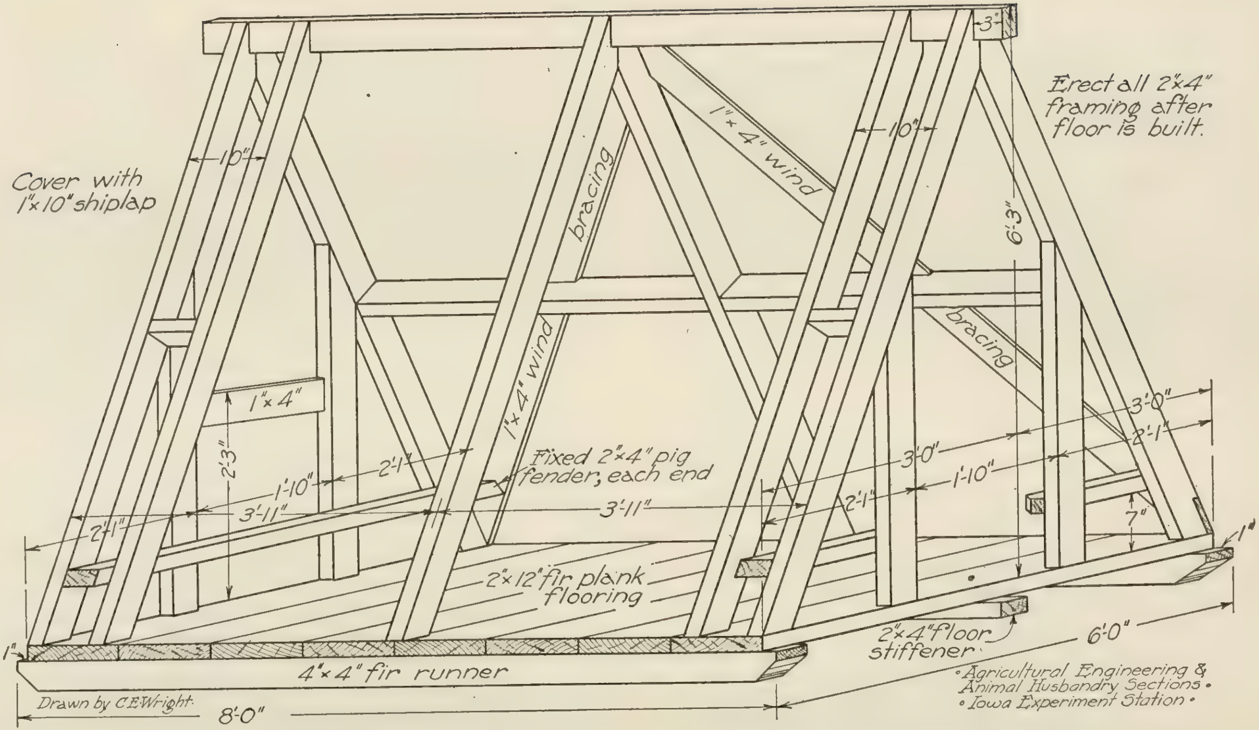
Cover with
1"×10" shiplap
Erect all 2"×4"
framing after
floor is built.
3"
10"
10"
1"×4" wind
bracing
bracing
1"×4" wind
6'3"
1"×4"
2'3"
Fixed 2"×4" pig
fender, each end
2'1"
1'10"
3'11"
2'1"
3'11"
3'0"
2'1"
1'10"
3'0"
2'1"
7"
1"
1"
2"×12" fir plank
flooring
4"×4" fir runner
2"×4" floor
stiffener
6'0"
8'0"
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Fig. 18. "A" House (Doors Hinged at Side). Perspective showing framing details.

must use very heavy wire and fasten the eye bolts in such a manner that there will be a minimum of stress. The eye bolts as shown in figures 22 and 23 should be placed nearer the ridge than shown in order to be serviceably successful.

Ordinarily when it is quite windy, this type of door hinged at top is best kept tightly closed, otherwise the wind if strong will lift it off from its hinges. The use of as many as three hinges, strongly reinforced with battens on the under side of the door, is quite desirable inasmuch as they will insure greater strength and rigidity.

THE TEPEE HOUSE.

In building the Tepee (see figures 27. 28, 29, 30 and 31) we have economized in the material used, and at the same time have constructed a most rigid and substantial house. The angularity of the frame is such as to materially stiffen the structure. It is quite questionable, however, if the saving of material will compensate for the extra labor involved in building. The admission of sunlight is not provided in the Tepee as presented, although side roof doors, preferably on the east when the house faces the south, may be easily provided.

The use of fenders on three sides of the house is obviated in that the sloping roof naturally protects the litter; fenders will need be constructed therefore only at the entrance and on either side of the door.

Ventilation is provided through openings near the ridge both at the front and rear ends.

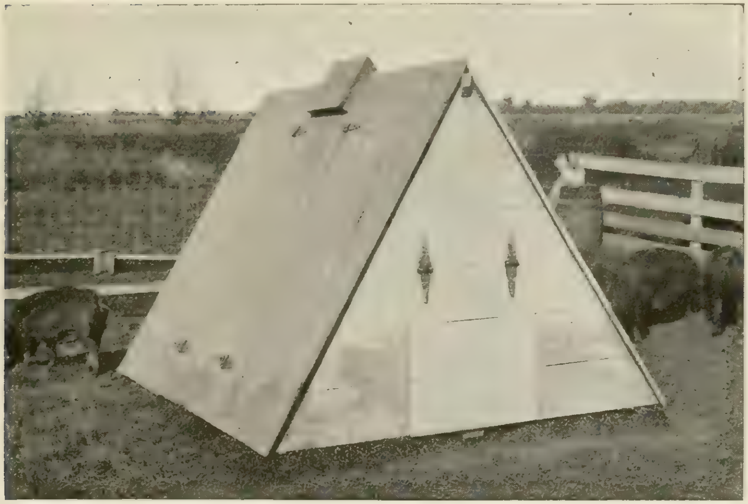

Fig. 19. Another "A" House (Doors Hinged at Side). Ventilator in ridge; This may be extended to gables by hinging side doors lower. Sliding is preferable to top hinged entrance door. Make doorway higher for mature swine.

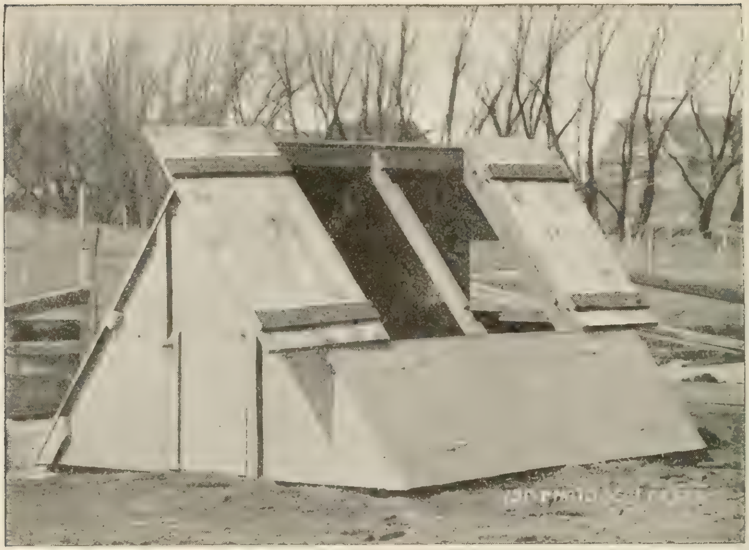

Fig. 20. A Successful "A" House (Double Doors Hinged at Side). Front and Side view; top doors open.

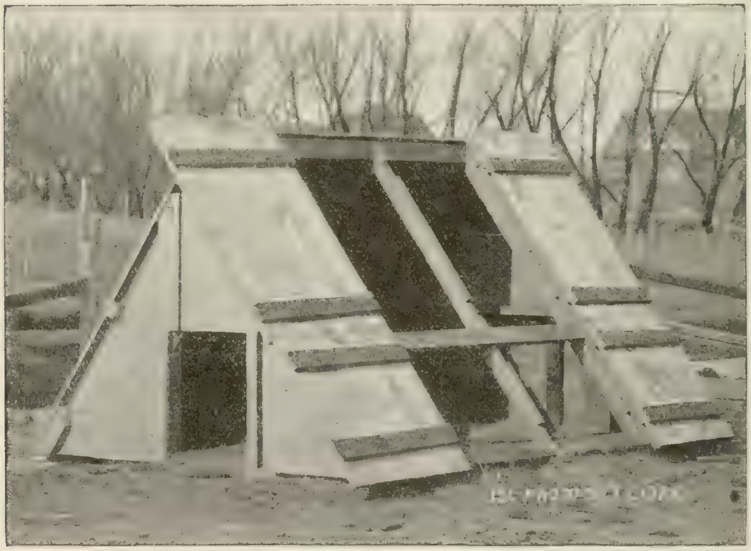

Fig. 21. A Successful "A" House (Double Doors Hinged at Side). Facing south; east roof and south doors open for morning sunning.

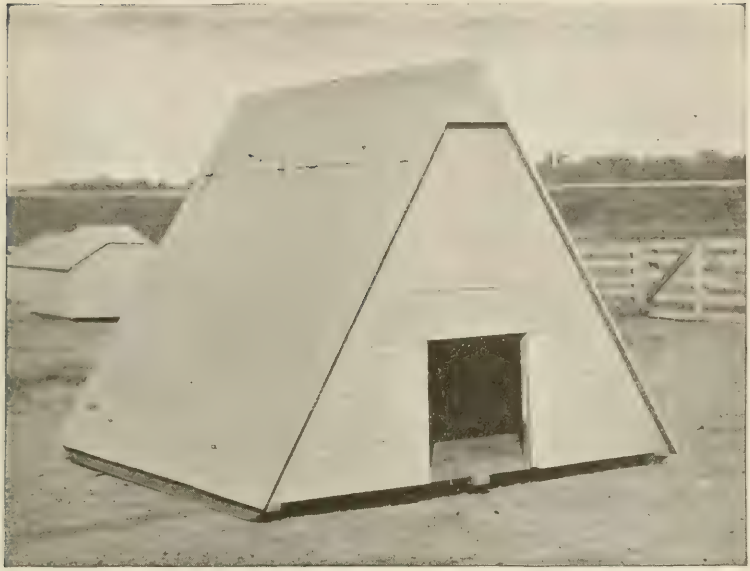

Fig. 22. "A" House (Doors Hinged at Top). Front view showing improved ventilator; closed. Top eye bolts should be nearer ridge. Make the doorway higher for mature swine.

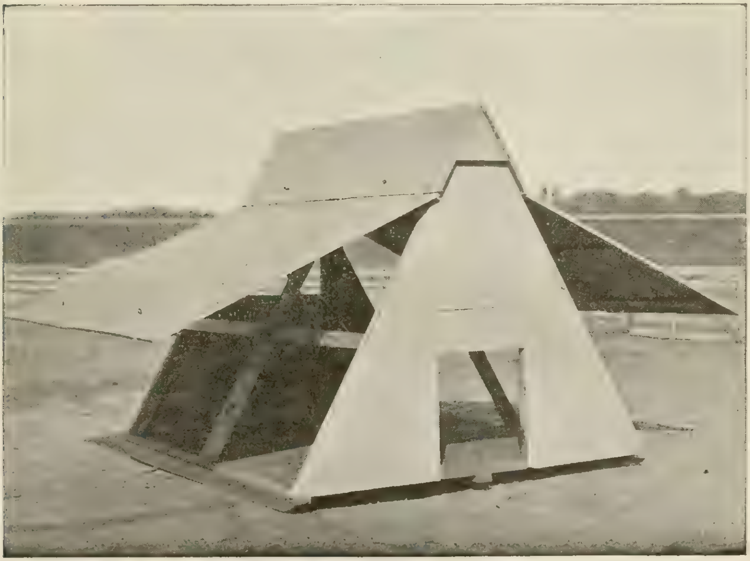

Fig. 23. "A" House (Doors Hinged at Top). All doors open for shade and airing. Adapted to warm, sunny climate. Top eye bolts should be nearer edge. Make doorway higher for mature swine.

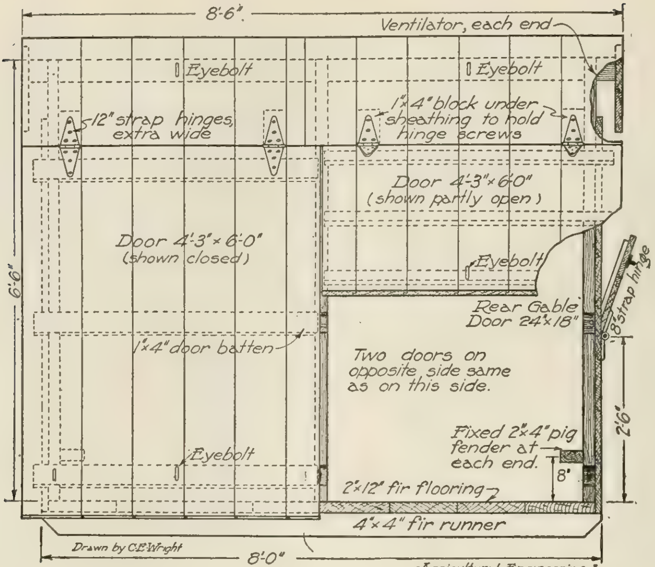
8'-6"
Ventilator, each end
Eyebolt
Eyebolt
12" strap hinges, extra wide
1"×4" block under sheathing to hold hinge screws
Door 4'-3"×6'-0" (shown partly open)
Door 4'-3"×6'-0" (shown closed)
Eyebolt
6'-6"
Rear Gable Door 24"×18"
8" strap hinge
1"×4" door batten
Two doors on opposite side same as on this side.
2'-6"
Fixed 2"×4" pig fender at each end.
8"
Eyebolt
2"×12" fir flooring
4"×4" fir runner
Drawn by C.E.Wright
8'-0"

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Fig. 24. "A" House (Doors Hinged at Top). Side elevation.

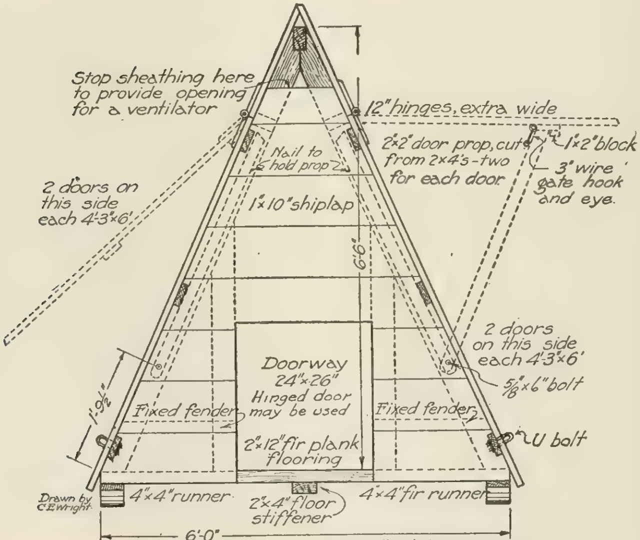
Stop sheathing here to provide opening for a ventilator
12" hinges, extra wide
2"×2" door prop, cut from 2×4's - two for each door
1"×2" block
3" wire gate hook and eye.
Nail to hold prop
1"×10" shiplap
2 doors on this side each 4'-3"×6'
6'-6"
2 doors on this side each 4'-3"×6'
5/8"×6" bolt
Doorway 24"×26" Hinged door may be used
1'-9½"
Fixed fender
Fixed fender
2"×12" fir plank flooring
U bolt
Drawn by C.E.Wright
4"×4" runner
2"×4" floor stiffener
4"×4" fir runner
6'-0"

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Fig. 25. "A" House (Doors Hinged at Top). Front end elevation. Make doorway higher for mature swine.

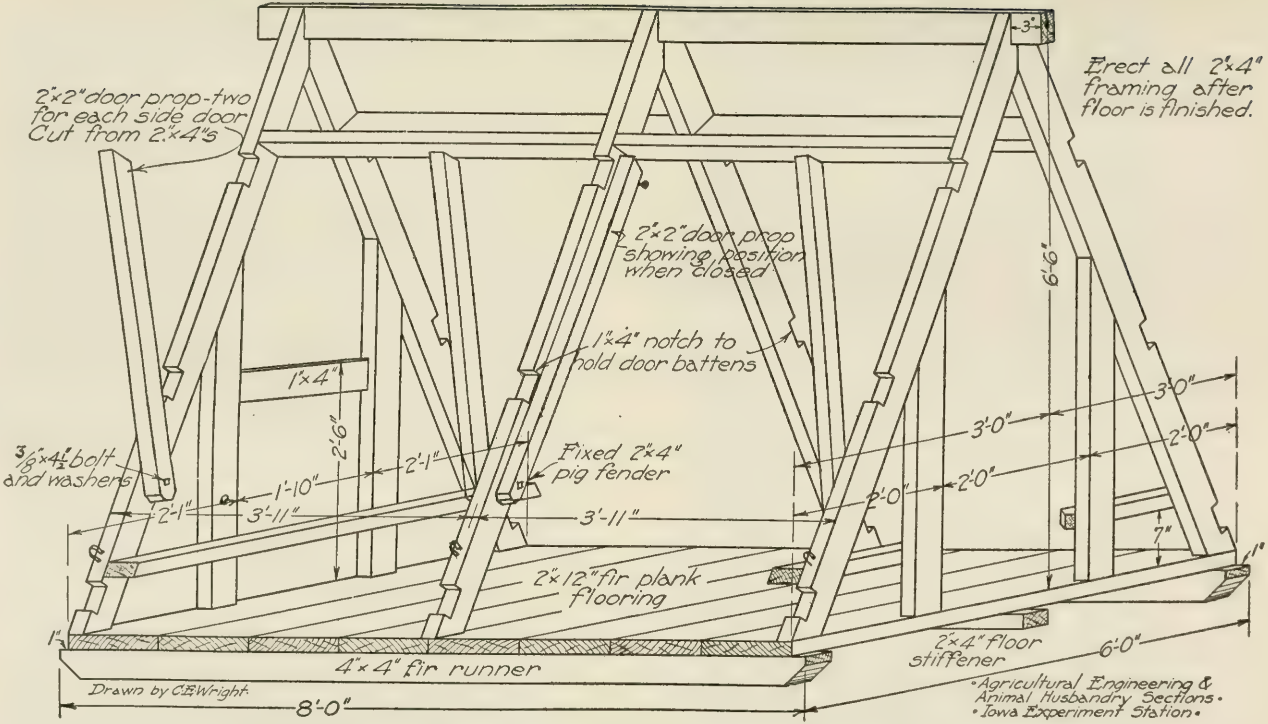
2"×2" door prop-two
for each side door
Cut from 2"×4"s
Erect all 2"×4"
framing after
floor is finished.
3"
2"×2" door prop
showing position
when closed
6'-6"
1"×4" notch to
hold door battens
1"×4"
2'-6"
3/8"×4½" bolt
and washers
Fixed 2"×4"
pig fender
2'-1"
1'-10"
2'-1"
3'-11"
3'-11"
3'-0"
3'-0"
2'-0"
2'-0"
2'-0"
2'-0"
7"
1"
1"
2"×12" fir plank
flooring
4"×4" fir runner
2"×4" floor
stiffener
6'-0"
8'-0"
Drawn by C.E.Wright.
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Fig. 26. "A" House (Doors Hinged at Top). Perspective showing framing details.

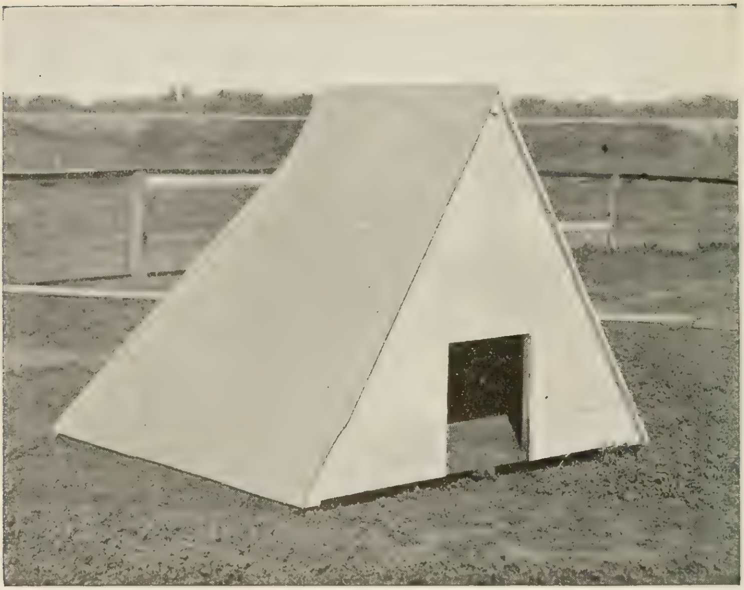

Fig. 27. Tepee House. Side and Front view. Make doorway higher for mature swine.

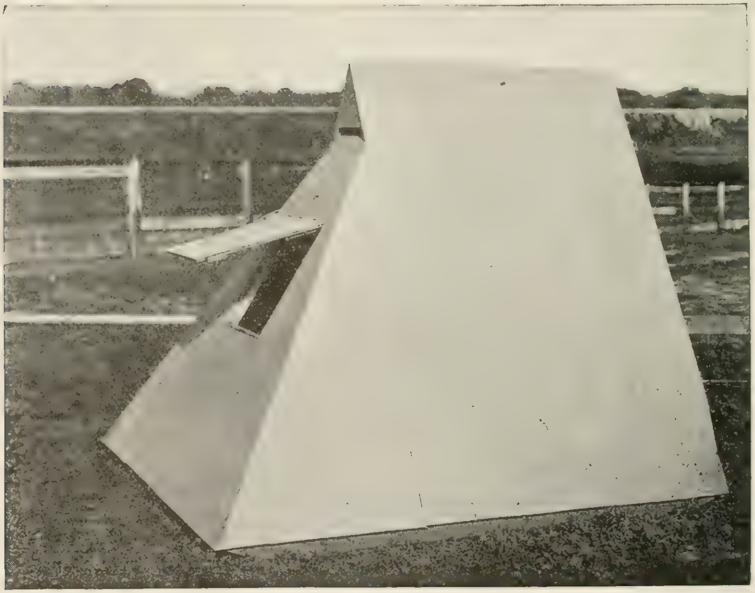

Fig. 28. Tepee House. Rear and Side View. Roof door may be provided for sunning and airing.

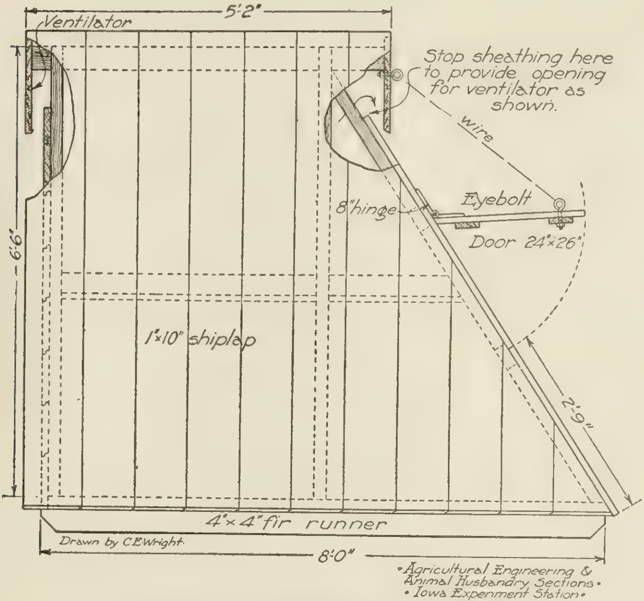
5'-2"
Ventilator
Stop sheathing here to provide opening for ventilator as shown.
wire
Eyebolt
8" hinge
Door 24"×26"
6'-6"
1"×10" shiplap
2'-9"
4"×4" fir runner
Drawn by C.E.Wright.
8'-0"
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Fig. 29. Tepee House. Side elevation.

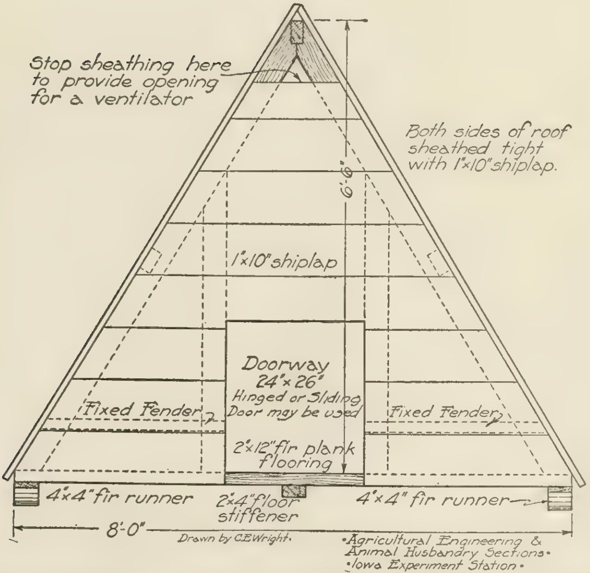
Stop sheathing here to provide opening for a ventilator
Both sides of roof sheathed tight with 1"×10" shiplap.
6'-6"
1"×10" shiplap
Doorway 24"×26"
Hinged or Sliding Door may be used
Fixed Fender
Fixed Fender
2"×12" fir plank flooring
4"×4" fir runner
2"×4" floor stiffener
4"×4" fir runner
8'-0"
Drawn by C.E.Wright.
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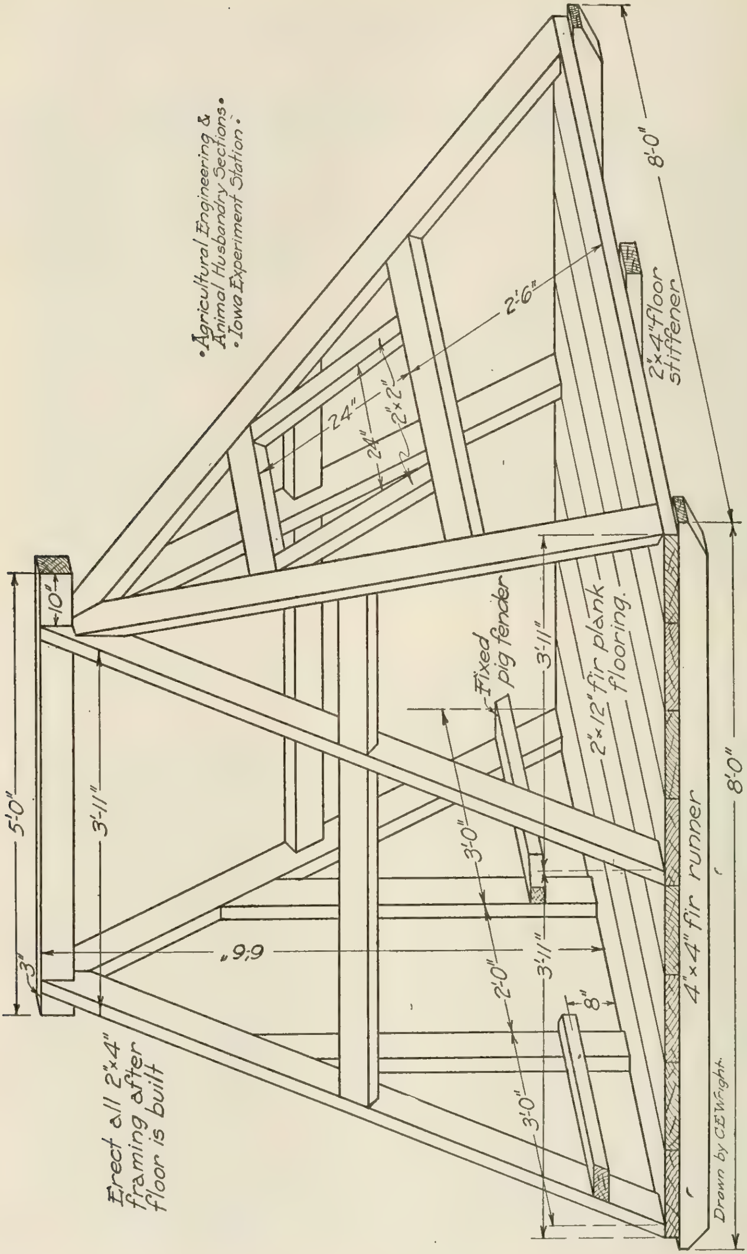
Fig. 30. Tepee House. Front End elevation. Make doorway higher for mature swine.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5'-0"
3'-11"
10"
3"
6'-6"
Erect all 2"×4"
framing after
floor is built
2'-6"
24"
24"
2"×2"
8'-0"
2"×4" floor
stiffener
Fixed
pig fender
3'-0"
2'-0"
3'-0"
3'-11"
3'-11"
8"
2"×12" fir plank
flooring.
4"×4" fir runner
8'-0"
Drawn by C.E.Wright.

Fig. 31. Tepee House. Perspective showing framing details.

THE ECONOMY HOUSE.

One may easily, quickly, and with moderate cost construct the Economy house. (See figures 32, 33, 34 and 35.) Many of the excellent features of the more elaborate and complete house are included.

The most convenient and handy of all the houses presented is the Economy, built at a cost of not to exceed $8.00 for material. We have here a most successful house from the standpoint of economy. Figuring on a total cost of $10 for each house, same to include lumber, hardware, paint and labor, and allowing an average service of ten years we have a depreciation of $1.00 per annum. Counting the interest on one-half the average value, or $5.00, at 5% makes an additional cost per annum of 25c; in addition we may include up-keep charges at 25c, making a total of $1.50 annual cost. During the year such a house should shelter the equivalent of four sows with litters following, at an average cost to the sow with litter of $.375, or assuming that seven pigs are raised to the litter we have a cost of a little over 5c to the weanling pig,—a most reasonable charge.

The Economy is built of small size, being of 5′x7′ floor dimensions. The somewhat expensive floor which has been built in the other houses, although optional with the builder, has not been included. Because of the absence of wooden floor the location should be dry, and preferably quite high. The house will shelter a reasonable large sow with litter.

In providing sheltering and farrowing facilities the Economy has a wide field of usefulness. When it becomes necessary to furnish protection for the sow that farrows unexpectedly in the pasture or field, far removed from the central buildings, the small Economy is handy.

For the admittance of sunlight the east side roof, the entrance door being on the south, has a roof door hinged at the side. A small rear door is furnished for convenience to the attendant and to provide additional ventilation if needed. The ventilators under the comb of the roof provide systematic and ample aeration for general purposes.

The front end doorway may be provided with a simple top hinged door if it is deemed necessary. On this small house the door may be dispensed with, although its addition has obvious advantages.

THE CASE OF THE METAL HOG HOUSE.

The persistent high price of lumber has encouraged some manufacturers to place a metal hog house upon the market. At the present time it is quite widely advertised in the farm press, and a considerable number are being sold in this state.

These questions have become important: Is the metal house satisfactory? Does it possess the essentials of an ideal hog house, and if not, wherein does it fail?

To learn of the relative warmth and range in temperature within the standard wooden as compared with the new metal "A" houses a series of experimental tests was conducted. The wooden houses used were of the same general type and size as the metal ones, thus making the comparison fair and trustworthy. Table I gives a general idea of the floor size, capacity, and outside area (divided so as to show the entire as well as the east and south surface areas) of the houses compared.

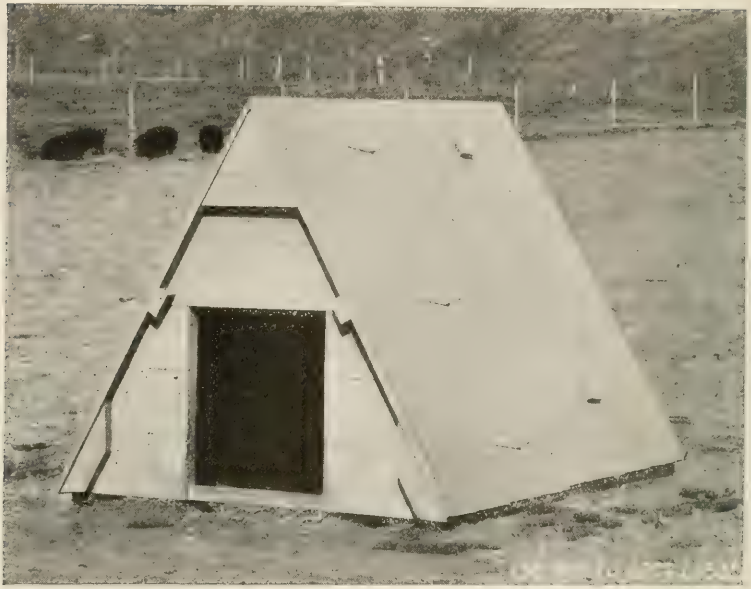

Fig. 32. Economy House. Front view; closed for winter.

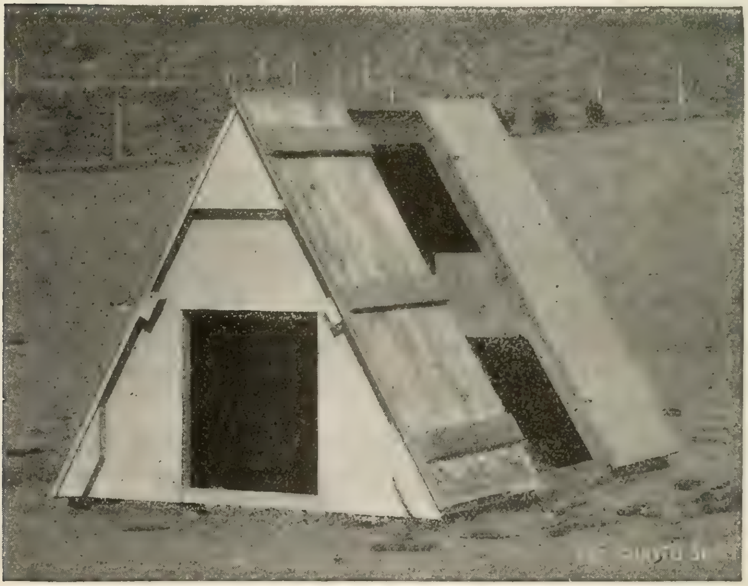

Fig. 33. Economy House. Front view; open for spring and fall litter sunning.

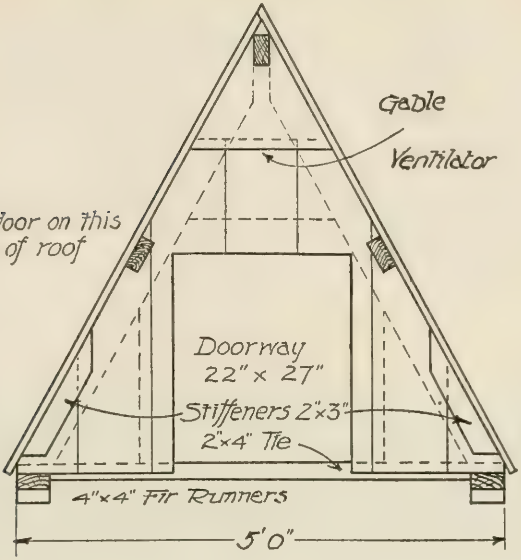
Gable
Ventilator
No door on this side of roof
Doorway 22" × 27"
Stiffeners 2"×3"
2"×4" Tie
4"×4" Fir Runners
5'0"

Fig. 34. Economy House. Front end elevation.

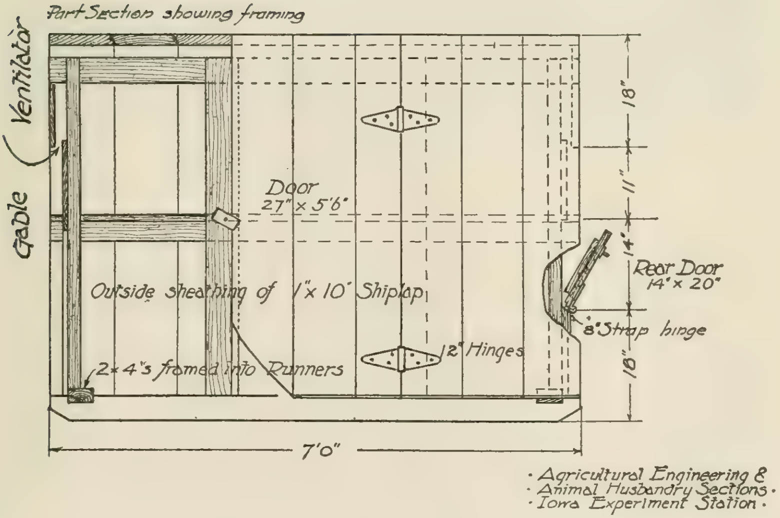
Part Section showing framing
Ventilator
Gable
Door 27" × 5'6"
Outside sheathing of 1"× 10" Shiplap
2×4's framed into Runners
12" Hinges
Rear Door 14" × 20"
8" Strap hinge
18"
11"
14"
18"
7'0"
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Fig. 35. Economy House. Side elevation.

TABLE I—*Movable Houses Tested.*

(Description of houses used and weight of hogs sheltered.)

No. of house	Series	Material of Construction	Floor Size (approximate) feet	Capacity cu. feet	Outside Surface Area		Weight of Hogs			
					Entire sq. feet	Side and South	Initial March 18th	Final March 24th	Average	Total Gain
1	B	Metal	6x8	120.23	123.32	61.66	444	470	457	26
2	B	Wood	6x8	102.15	1 6.29	68.15	430	460	445	30
3	A	Wood	5x7	53.63	92.07	46.03	460	485	473	25
4	A	Metal	5x7	56.08	79.75	39.88	430	450	440	20

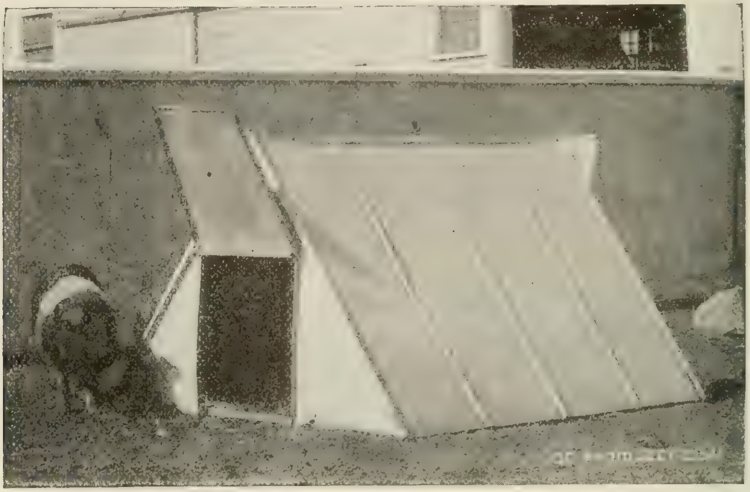


Fig. 36. A Metal House. Front and Side view; all doors open. This house has seen less than a year of light service.

Note that the Series "A" houses, Nos. 1 and 2, are quite comparable as are those of Series B, Nos. 3 and 4. This side (east or west) and south surface areas are figured to give one an idea of the sunned portion. The sunshine is instrumental in the raising of the temperature, shining directly as it does upon the roof, sides and south end. The houses were all placed in a row, having the entrance doors facing the south, and arranged in such a manner that all were under uniform conditions.

Three hogs of approximately 150 pounds average weight were confined in each house eight days, they being fed and watered therein. In the meantime, after a couple of days' preliminary feeding, temperatures were observed and recorded.

That the range in temperature should be greater within the metal houses than the wooden is not particularly surprising when one con-

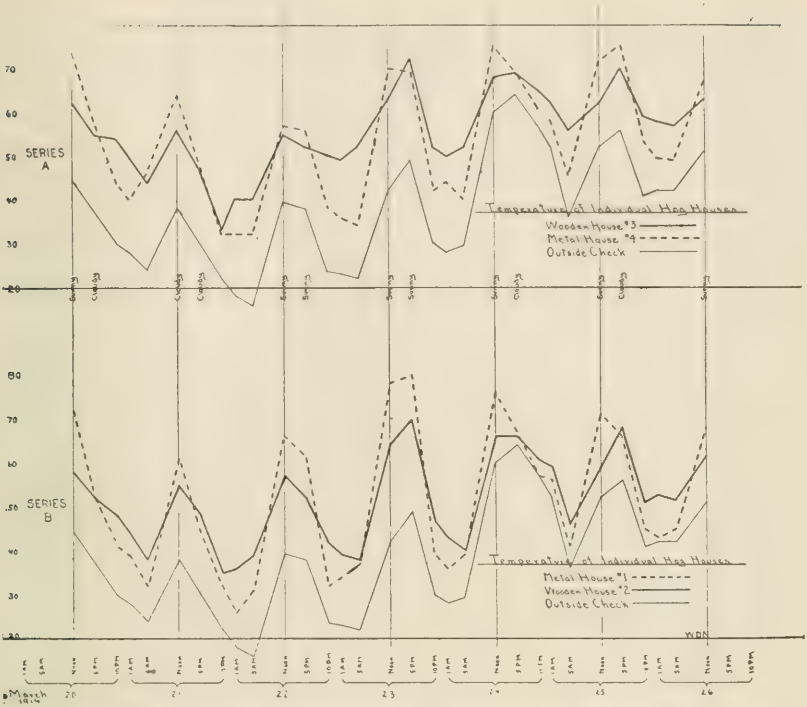


Fig. 37. The Relative Temperatures of Wooden and Metal Houses When Occupied; Graphical Chart.

siders the relative conductivity of the two materials. In series B we have an average range of 36° Fahrenheit with the metal as compared to 21° for the wooden house, or 71.43% greater range for the metal construction. In series A (smaller houses) we have an average range of 29.2° with the metal as compared to 15.8° for the wooden house, or 84.81% greater range for the metal construction.

It make but little difference how one makes the comparisons; uniformly and consistently the metal houses conduct both heat and cold readily.

The plotted charts in Fig. 37 place squarely on a systematic and understandable basis the daily variations in temperature. They show the temperatures of all houses, as well as the normal atmospheric check, at the hours of 1 a. m., 5 a. m., noon, 5 p. m. and 10 p. m., daily from March 20, 1 a. m., until March 26, noon, 1914. On the heavy middle line is designated the climatic conditions of "sunny" and cloudy."

The metal house is hotter in the middle of the day and colder at night than the wooden; tracing the plotted lines in both Series A and Series B of the metal and wooden structures forcibly impresses one with the truth of this.

In no instance was the metal house cooler at noon (when it had best be) or warmer shortly after midnight, 1 a. m. (when it had best be) in these observations. It will be instructive to make these comparisons of temperature between metal and wooden houses in the dead of winter and in the middle of summer; it is the plan of the Experiment Station to do this.

Other features of the metal house deserve mention: Permanent attached floors are not usually furnished but it is a comparatively simple matter to supply these. Possibly the most simple procedure would be to build a solid movable floor and place the house on it. This floor with attached runners would enable quick moving without portage—and thus add to the merit of the house in general. Unless built of strong, durable material well re-enforced the question of serviceability may be a serious one. The wooden frame with the steel covering has much to commend it from the substantial structural standpoint. The "A" type seems to be the most feasible and practical for metal construction (unless wooden frame be used) and the "A" type disadvantages heretofore given are ever present. Being naturally a light weight house, the hogs may move it easily out of position; of course, one can fasten the house securely, but that necessitates extra labor and care, furthermore such procedure interferes with the "quick and handy" movable feature. Shade is not very efficient under a metal roof, this being particularly true when the overhead protection is in close proximity to the shaded animals. It is quite essential that the natural shade of trees supplement the ordinary "A" type of metal house in the summer. The somewhat reasonable first cost will make an appeal to one's sense of economy; this in addition to ease of portage are the outstanding talking points of the metal house.

GENERAL CONSIDERATIONS.

The selection of the best possible hog house is largely a problem of correctly interpreting local conditions. Recognition must be given the various factors which determine the ultimate usefulness of the house in question. By studying the essentials of an ideal house one prepares himself to render better judgment as to the comparative value of the different types.

REPORT OF THE ANNUAL MEETING OF THE IOWA BEEF PRODUCERS' ASSOCIATION.

The annual meeting of the members of the Iowa Beef Producers Association was held in Des Moines in the parlors of the Savery hotel on the afternoon of Friday, January 15th.

At this meeting resolutions were adopted favoring a liberal appropriation by the state for the purpose of securing and taking care of a strong representation of Iowa live stock for the Panama-Pacific exposition. A legislative committee was appointed to work in harmony with other live stock interests of the state to secure such appropriations and also to secure further appropriations for the support of the work of the Beef Producers Association.

The following resolution drawn in the form of a telegram was adopted and sent to Senator W. S. Kenyon at Washington, D. C.:

Be It Resolved, By the Iowa Beef Producers Association now in session at Des Moines, Iowa, that it is the sense of this association that all animals destroyed by the government in the eradication of foot and mouth disease should be paid for in full damages to the owners thereof at their actual value and not at beef prices as heretofore adopted.

(Signed) C. F. Curtiss,
A. C. Binnie,
H. O. Weaver,
Committee.

The association representative, Rex Beresford, presented the following report of the year's work of the association:

REPORT OF WORK FOR 1914.

The active work of the Iowa Beef Producers Association began March 8, 1912, with the completion of the organization and the hiring of an association representative at that time. The first two years' work of the association up to January 1, 1914, is described in the detailed reports for 1912 and 1913.

For 1914, under the direction of the board of directors and the executive board, the work of the association has been along the lines of investigational work, publicity work, fairs, shows and institutes, and special train work. During 1914 investigational work was carried on largely through May, June, July and August, partly through visits to farms and partly through reports from farms visited in previous years.

Figures on production costs on thirty-nine farms producing baby beef have been compiled. These show that they grew and fed out in 1913-14 1,046 calves which were sold at an average weight of 864 pounds at sixteen and one-half months of age. The average price per cwt. was $9.20, and the average price per head $78.48. The average cost per head was $65.50, leaving a direct profit of $12.98 per head after all costs of production were paid, aside from labor.

Some time was also spent with the Extension Department farm tours during June; these tours combining investigational and educational work.

The publicity line of work has been carried on as before, though not to so great an extent as could be desired on account of lack of time. This includes articles along beef cattle lines in the various farm papers and some news items and short articles sent out to weekly and daily papers of the state, both directly and through the bureaus furnishing plate matter for these publications.

The first edition of 20,000 copies of a sixty-four page booklet on "Beef production in Iowa" gotten out in 1913 being exhausted, the material was revised and a second edition of 25,000 copies was printed in August, 1914. About 4,000 copies of this edition have already been distributed.

Three hundred and eighteen letters of inquiry relating to beef cattle breeding and feeding have been received and answered during the year.

During 1914 the association representative has filled forty-six speaking dates, attended six farmers' picnics and judged cattle at sixteen shows and fairs in Iowa. Nine beef calf shows, such as were discussed at the last annual meeting, have been promoted by the organization. A small booklet on methods of holding such shows was gotten out and distributed to secretaries of fairs, institutes, etc. A number of other shows besides those held were arranged for or in process of organization but were dropped on account of foot and mouth disease and quarantine in the state.

From March 17th to 27th, inclusive, a Beef Producers Special Train was operated over the Milwaukee lines in Iowa. This train made sixty-four stops. It was visited by nearly 13,000 farmers and 15,000 booklets were distributed from the train. It was the most successful and best attended train so far run.

Itemized monthly reports of the expenditures of the association are in the hands of the secretary of the association and also with the executive council of Iowa. For that reason but a brief report is given here:

FINANCIAL REPORT

Expenses and salary of Representative—		
Transportation	$ 123.02	
Hotel Expenses	87.65	
Salary	1,800.00	$ 2,010.67
Expenses and salaries of advance men, speakers and helpers on special trains—		
Transportation	102.41	
Hotel Expenses	73.85	
Miscellaneous Expenses	10.30	
Salaries	87.00	273.56
Expenses of Board of Directors attending meetings	25.28	25.28
Miscellaneous expenses of Association—		
Printing and stationery	862.88	
Postage	74.04	
Help (aside from on Specials)	21.98	
Feed, bedding and supplies	33.75	
Camera supplies, photo work	28.47	
Drayage, freight, express, storage	15.85	

Telegraph and Telephone charges	9.41	
Chart Cloth, typewriter supplies, etc	5.50	
Tent, signs, halls, etc.	2.10	
Out of town car fare, hack fare, etc.	1.50	$ 1,055.48
Total expenditures for 1914		$ 3,364.99
Total expenditures for 1913		$ 3,625.66
Total expenditures for biennial period Jan. 1, 1913 to 1915		$ 6,990.65

This report was approved as read.

The following list of directors was then elected for 1915:

First District—W. B. Seeley, Mount Pleasant.

Second District—Fred McCulloch, Belle Plaine.

Third District—R. M. Gunn, Buckingham.

Fourth District—Wm. McArthur, Mason City.

Fifth District—W. W. Vaughn, Marion.

Sixth District—Ralph Sherman, Grinnell.

Seventh District—John Shambaugh, Booneville.

Eighth District—C. W. Huntley, Chariton.

Ninth District—Charles Escher, Jr., Botna.

Tenth District—George W. Godfrey, Luverne.

Eleventh District—A. C. Binnie, Alta.

On motion the meeting was adjourned. A directors' meeting followed immediately where the following officers were elected:

President—R. W. Cassady, Whiting.

Vice-president—C. W. Huntley, Chariton.

Secretary—Ledru Willits, Mount Pleasant.

Treasurer—C. S. Hechtner, Chariton.

On motion it was decided to ask the general assembly for an appropriation of $7,500 for the next biennial period, with which to carry on the work of the association. A legislative committee consisting of R. W. Cassady, Ledru Willits, C. W. Huntley, Ralph Sherman and Charles Escher, Jr., was appointed to present the needs of the association to the legislature.

Iowa's Best Crop. Prize Winners at the 1914 Iowa State Fair and Exposition.

PART XI

Annual Report of the Iowa Weather and Crop Service for 1914

GEO. M. CHAPPELL, Director

The object and aim of this report is to place before its readers a condensed summary of the monthly and weekly bulletins, issued by the Iowa Weather and Crop Service, in co-operation with the Weather Bureau of the U. S. Department of Agriculture. It is believed that in this form the matter will be especially valuable and convenient for reference and comparison in future years.

Reports have been received regularly each month from 114 co-operative meteorological stations and from the U. S. Weather Bureau stations at Des Moines, Davenport, Dubuque, Charles City, Keokuk and Sioux City, Iowa, and Omaha, Neb. Crop reports were received on the first of June, July, August, September and December, from about 1,400 correspondents, and weather-crop reports were received weekly from April to September, inclusive, from 150 correspondents who are well distributed over the State.

The instrumental equipment at the meteorological stations has been kept up to a high standard, new thermometers, rain gages and instrument shelters being issued to co-operative observers to replace worn out or defective instruments or equipment whenever necessary.

There were distributed during the year 23,000 copies of the Monthly Reports, and 35,000 copies of the Weekly Weather-Crop Bulletins. Four hundred and twenty-five of the Monthly Reports are distributed each month through the Weather Bureau, U. S. Department of Agriculture to scientific institutions in this and foreign countries.

Daily weather forecasts were distributed by telegraph at the expense of the United States Weather Bureau to 76 towns; by mail to 2,636 addresses; by rural free delivery to 909 addresses, and by free telephone to 95,621 subscribers. Arrangements were made to supply all fruit growers, who were prepared to use orchard heaters in case of frost, with timely warnings. This branch of the work is highly appreciated by orchardists and will, we believe, increase within the next few years.

The co-operation with the Horticultural Department, Iowa Experiment Station, was continued during the year with fairly good results.

CLIMATOLOGY OF THE YEAR 1914

BAROMETER (reduced to sea level).—The average pressure of the atmosphere for the year was 30.06 inches. The highest pressure was 30.72 inches at Dubuque on February 24th, and at Keokuk on December 16th; the lowest pressure was 29.29 inches, at Keokuk, on January 8th. The range for the State was 1.43 inches.

TEMPERATURE.—The mean temperature for the State was 49.1°, or 1.7° higher than the normal. The highest annual mean was 53.4°, at Keokuk, Lee County. The lowest annual mean was 44.1°, at Estherville, Emmet County. The highest temperature reported was 109° at Centerville, Appanoose County, on July 12th. The lowest temperature reported was —31°, at Iowa Falls, on December 26th. The range for the State was 140°.

PRECIPITATION.—The average amount of rainfall and melted snow for the year was 31.93 inches, or 0.04 inch less than the normal, and 1.98 inches more than the average for 1913. The greatest amount at any station was 44.11 inches, at Marshalltown, Marshall County, and the least amount was 23.32 inches, at Columbus Junction, Louisa County. The greatest monthly precipitation was 16.24 inches, at Lenox, Taylor County, in September. There was no precipitation at Lake Park, Dickinson County, and at Rock Rapids, Lyon County, in November. The greatest amount in any 24 consecutive hours was 7.78 inches, at Cedar Rapids, Linn County, on September 14th.

SNOWFALL.—The average amount of snowfall was 27.5 inches. The greatest amount reported from any station was 50.7 inches at Northwood, Worth County, and the least amount was 14.9 inches at Monroe, Jasper County. The greatest monthly snowfall was 24.6 inches at Centerville, Appanoose County, in February. Measurable precipitation occurred on an average of 91 days. This is 5 more than for 1913.

WIND.—The prevailing direction of the wind was south. The greatest velocity reported was 68 miles an hour from the northwest at Sioux City, on February 28th.

SUNSHINE AND CLOUDINESS.—The average number of clear days was 166; partly cloudy 102; cloudy 97, as against 182 clear days, 89 partly cloudy, and 94 cloudy days in 1913. More than the normal amount of sunshine was experienced.

MONTHLY SUMMARIES

JANUARY.

A January so pleasant and agreeable as that of 1914 is but rarely experienced in Iowa. The mean temperature averaged 10° higher than usual, the month being the mildest January since 1880; however the latter month averaged about 4° warmer than the current January, and stands as the warmest month of the name in the climatological history of the State.

The mild and open character of the month was a subject of widespread comment and discussion, as were the similar conditions that had obtained during the two preceding months; and reference to the records discloses that the present winter season in the State to date (February 1st) is without exception the mildest of record.

There were no storms during the month that could be classed as at all severe, and the snowfall over much of the State was lighter than usual. The latter did not remain on the ground long, and as a result there was little if any sleighing. The weather conditions of the month were especially favorable for stock, which was out much of the month, thereby effecting a considerable saving in feed. Building operations suffered little interruption because of unfavorable weather conditions.

Pressure.—The mean sea-level pressure for the State was 29.97 inches; the highest recorded was 30.68 inches, at Sioux City, on the 12th; the lowest recorded was 29.29 inches, at Keokuk, on the 8th.

Temperature.—The monthly mean for the State, 105 stations reporting, was 27.8°, or 9.9° higher than the normal. The month was relatively mildest in the western part of the State, where the average temperature was about 11° higher than the normal. The warmest point, as usual, was Keokuk, where the mean temperature averaged 34.0°, and the coldest point was Northwood, a station near the Minnesota line, the average temperature there being 22.2°. In all parts of the State the month was the mildest January since 1880.

Only a few days in the month were colder than usual for the time of year; at Des Moines there were but 3 such days, viz., the 10th, 12th and 25th. The lowest temperature of the month occurred on the morning of the 12th in connection with a sudden cold wave; in the northern part of the State the values were mostly between 5° and 10° below zero, while at many stations in the Southern Section the zero point was not quite reached. The lowest temperature reported was —10°, at Inwood and Lake Park, stations in northwestern Iowa. On several different days in the month the temperatures were in the fifties in all parts of the State, the highest reported being 64°, at Keokuk, on the 28th. No records for high temperature were broken.

Humidity.—The average relative humidity for the State was 81 per cent, the percentages ranging from 83 at Davenport and Dubuque to 78 at Des Moines. The averages were slightly higher than usual.

Precipitation.—The average for the State, 111 stations reporting, was 0.88 inch, or 0.17 inch less than the normal. In general the geographical distribution conformed to the average of past years, the amounts being heaviest in the southeast and lightest in the west. The greatest amount was 2.34 inches, at Fort Madison, and the least amount was 0.27 inch, at Pacific Junction. The former was the only station reporting as much as 2 inches, and 1.74 inches of the total fall at that station occurred on the 28th. The great bulk of the month's precipitation occurred on and after the 18th, and was in the form of snow, except on the 28th.

Snowfall.—The average for the State was 5.1 inches, or about 2 inches less than the normal. The amounts ranged from 11.0 inches, at Sioux Center, to a trace at Elliott.

Wind.—Northwesterly winds prevailed, and the movement was less than usual for January. The month was especially free from high winds; the highest velocity reported was 52 miles an hour, from the northwest, at Sioux City, on the 28th. The windiest days were the 1st, 2d, 20th and 29th.

Sunshine and Cloudiness.—For the State as a whole the percentage of sunshine received was about the normal amount; but there was a marked deficiency in eastern Iowa; at Dubuque the percentage of the possible amount was 24, or only about half the normal amount. At that point it was the darkest January of record. In Western Iowa the month had an excess of sunshine. The average number of clear days for the State was 11; partly cloudy, 8; cloudy, 12.

Miscellaneous Phenomena.—Sleet occurred at some point in the State on the 1st, 6th, 17th, 18th, 28th and 29th; fog was recorded on the 1st, 4th, 5th, 6th, 7th, 8th, 18th, 19th, 26th, 27th and 28th. Lightning and thunder occurred in connection with the storm of the 28th-29th, but this phenomenon was not widespread.

COMPARATIVE DATA FOR THE STATE—JANUARY.

Year	Temperature			Precipitation		
	Mean	Highest	Lowest	Average	Greatest	Least
1890	19.7	61	-27	2.03	3.46	.35
1891	26.0	58	- 4	1.75	3.99	.61
1892	15.3	76	-38	1.09	3.13	.10
1893	9.3	54	-34	.74	3.20	.13
1894	19.3	69	-37	1.09	2.24	.31
1895	13.6	68	-31	.85	2.65	.09
1896	23.4	68	-20	.48	2.10	T
1897	17.2	66	-30	2.01	6.16	.15
1898	23.4	52	-11	1.60	5.32	T
1899	19.8	68	-34	.28	1.15	T
1900	25.6	66	-20	.53	2.47	T
1901	23.7	60	-21	.74	2.34	.04
1902	22.4	63	-31	.88	2.83	.19
1903	23.0	60	-12	.28	1.46	T
1904	14.0	57	-32	1.18	3.68	.02
1905	11.2	56	-30	.91	1.82	.12
1906	24.6	69	-19	1.52	4.71	.28
1907	18.8	68	-22	1.52	5.30	.10
1908	24.9	60	-18	.44	1.50	.06
1909	21.2	72	-25	1.66	3.74	.41
1910	18.1	56	-35	1.57	3.15	.55
1911	20.2	66	-35	.97	3.73	.11
1912	4.2	49	-47	.53	1.90	T
1913	20.9	62	-25	.77	2.05	.04
1914	27.8	64	-10	.88	2.34	.27

T indicates a trace. - indicates temperature below zero.

TEMPERATURE IN IOWA FOR DECEMBER AND JANUARY, 1860-1914.

(Iowa City, Iowa.)

The present unusually moderate winter throughout Iowa has been a matter of general comment, and some data concerning the months of December and January just past may be interesting, especially if compared with records for the same months of former years. We find the months of December, 1913, and January, 1914, unique in the annals of Iowa weather.

Voluntary observations on the weather in the state of Iowa were first begun by Professor T. S. Parvin at Muscatine as early as 1839, and the work continued there for twenty years. In 1860 Professor Parvin began observations at Iowa City and these have been continued without interruption since that time.

On account of the location of Muscatine upon the Mississippi river the mean temperature taken at that station is probably a little above the average temperature at Iowa City; this may be borne in mind when considering data prior to 1860.

The past fifty years have been characterized by one December and one January each of which stands out with a temperature so far above the average as to satisfy even the demands of "the oldest inhabitant." January, 1880, with a mean temperature of 35.2°, and December, 1877, with a temperature of 40.1° are so far above the average for these respective months as to probably be rarely equaled. The absolute maximum of December, 1877, was 63° or 10° above the mean of the maxima for this month. The abnormal temperature of this particular month was shown by the fact that only on thirteen nights did the thermometer fall to the freezing point.

If we take the month of January as observed at Iowa City beginning with 1860, we find that the mean temperature of the month just passed has been equaled or exceeded only for the corresponding months in 1880, 1891 and 1900, or but four times in fifty years have we had as warm a January. The temperature of December, 1913, has been equaled or exceeded only in the years 1877, 1891, 1892 and 1897. There have been then but five such warm Decembers in fifty years.

Since a warm month in any one year may or may not be preceded or followed by another warm month, it does not follow that an extremely warm December or January means a really mild winter. For example, the January of 1880, as said above, was the warmest ever recorded at this station; yet because the December preceding was decidedly below normal, the result was not a high average for the two months.

When the mean then of December and January is considered, we find that the two months just past have been equaled or exceeded only for the corresponding months in 1877-78 and 1890-91, or as warm a December and January together has occurred but three times in fifty years.

There is but little doubt but that these months in 1857-58 were as warm as the ones just past, yet the observations made at Muscatine can not be compared rigorously with those at Iowa City.

The average deviation from the mean may be taken as a measure of variability. The average deviation, for December, from the mean of 23.6° is, when computed from fifty years' observations at this station, found to be 4.7°; while this deviation in 1913 was 8.6°. The corresponding value for January is 5.9° and for January, 1914, it was 8.0°.

From the standpoint of probability we may expect a December as warm as that of 1913, about once in ten years, while a January like that just past may be expected perhaps once in thirteen years. A warm December with a January following such that a mean temperature equal to that of the past two months is observed, may probably occur once in seventeen years.

If the chance of a warm December and a warm January immediately following were entirely independent of one another, we should then have for the probability of such an occurrence the product of the two independent probabilities, or in this case one-tenth times, one-thirteenth or one divided by one hundred and thirty; while the combination seems to occur with a probability of one-seventeenth; we then must think that a warm December and January are not independent of each other. The data are too limited to be dogmatic in our conclusions yet one seems to be justified in assuming a strong correlation between two successive months.

The following table will make clear the numerical data given in this short sketch:

Years	Mean Temperature December	Years	Mean Temperature January	Years	Mean Temperature for December and January
1877	40.1	*1839	32.2	*1857-58	30.7
1891	33.1	*1858	30.0	1877-78	33.3
1892	32.9	1880	35.2	1890-91	30.9
1897	33.0	1891	28.6	1913-14	29.9
1913	32.9	1900	27.7		
		1914	26.9		

*Observations made at Muscatine.

ARTHUR G. SMITH.

FEBRUARY.

February, 1914, will compare favorably, as to weather conditions, with months of that name in past years. The average temperature was considerably below the normal, and there was an excess of wind movement, but the precipitation was less than usual; and, with the exception of the evening of the last day of the month, there was no general winter storm that could be classed as severe. As a result, there was much less than the average amount of trouble and inconvenience from drifting snow. In fact railroads, telephone and telegraph companies and stock feeders probably have never experienced a more favorable winter than this, so far as the weather is concerned. The month was the coldest February since 1905, but the deficiency of temperature was due to almost continuous moderately cold weather rather than to any extremely low temperatures or to any long continued cold spells. Nor were there any unusually warm periods. There were two cold waves of importance. The first occurred on the 7th-8th, and the second spread over the state on the afternoon and night of the last day of the month. The first was not severe, although it gave the coldest weather of the month and winter on the 8th. The one on the 28th was attended by winds of gale force and rapidly falling temperature. It proved to be one of the severest blows Iowa has experienced in recent years, and was the only general blizzard of the winter.

Ice of good thickness and quality was secured throughout the State, and the harvest was generally finished by the 20th.

Fall sown grains were covered by a mantle of snow during the coldest weather and were reported to be in good condition at the close of the month.

PRESSURE.—The mean sea-level pressure for the State was 30.24 inches; the highest recorded was 30.72 inches at Dubuque, on the 24th; the lowest recorded was 29.61 inches at Davenport on the 6th.

TEMPERATURE.—The monthly mean temperature for the State, 109 stations reporting, was 16.8°, or 3.7° lower than the normal. February was the coldest month of the winter, and the coldest February since 1905. It was 11.0° colder than January, 1914, and 1.1° lower than the normal for January. The highest temperature reported was 59° at Pella on the 28th, and the lowest was —29° at Inwood in the extreme northwestern corner of the State, on the 7th.

Over the northern counties the temperature was below freezing all of the time from the 4th to the 25th, inclusive, except on the 21st, when it was one or two degrees above that point. The 7th and 8th were generally the coldest days, but the monthly minimum at some stations was recorded on the 16th, 18th or 24th, and the lowest temperatures were recorded in the extreme western counties; the values in the extreme southwestern corner of the State being considerably lower than they were in the north-central, or northeastern counties. The most noticeable feature in regard to the temperature of the month was the sudden change from warm to cold that occurred during the last day of the month. During the forenoon of the 28th, in the western, and the afternoon in the eastern half of the State, the temperature was near or above 50°, but with the approach of the cold wave from the northwest the temperature fell rapidly during the afternoon and night, and the readings were only a few degrees above zero in the eastern part of the state on the following morning.

Humidity.—The average relative humidity for the State was 79 per cent, or about 2 per cent more than the normal. The average at 7 a. m. was 83 per cent and at 7 p. m. 74 per cent. The percentages at the several stations were as follows: Charles City, 84; Davenport, 82; Des Moines, 77; Dubuque, 83; Sioux City, 78; Omaha, Neb., 69 per cent.

Precipitation.—The average for the State, 114 stations reporting, was 0.87 inch, or 0.28 inch less than the normal. As in January the greatest precipitation was over the southeastern counties. The greatest amount was 1.99 inches at Keosauqua, and the least amount was 0.32 inch at Britt. Practically all of the precipitation came in the form of snow, which was fairly well distributed throughout the month. Light snow flurries were frequent, but the only general storms occurred on the 6th-7th, 12th, 15th, 20th, and 22d, during which most of the precipitation fell, the greatest amounts being recorded on the 6th.

Snowfall.—The average for the State was 9.2 inches, or 1.9 inches more than the average for the past 22 years. The greatest amount reported was 24.6 inches at Centerville, and the least was 2.5 inches at Britt.

Wind.—Northwesterly winds prevailed, the total movement being considerably more than the normal for February. High winds prevailed on several days, culminating in a severe gale on the 28th when considerable damage was done to plate glass windows, trees, telegraph and telephone poles, and buildings in various parts of the State. The highest velocity reported was 68 miles an hour, from the northwest, at Sioux City on the 28th.

Sunshine and Cloudiness.—The duration of sunshine was somewhat less than usual, the percentage of the possible amount being 53 at Charles

City; 57 at Davenport; 58 at Des Moines; 47 at Dubuque; 60 at Keokuk; and 55 at Sioux City. The average number of clear days for the State was 10; partly cloudy, 9; cloudy, 9. During the past 24 years the average number of clear days in February is 11; partly cloudy, 8; cloudy, 9.

MISCELLANEOUS.—Dense fog occurred quite widely on the 17th, 21st and 27th; sleet was reported from several points on the 2d, 18th, 22d and 26th; lightning was observed at Mason City on the 21st, and bright sun dogs were visible at Albia on the 1st.

COMPARATIVE DATA FOR THE STATE—FEBRUARY.

Year	Temperature			Precipitation		
	Mean	Highest	Lowest	Average	Greatest	Least
1890	26.0	67	-24	.83	2.18	.11
1891	19.4	70	-31	1.16	2.41	.55
1892	28.1	68	-20	1.20	2.18	.12
1893	16.4	60	-28	1.39	2.91	.06
1894	19.7	60	-19	.89	2.41	T
1895	16.4	73	-33	.49	1.34	.02
1896	27.4	78	-13	.71	2.40	.04
1897	24.7	61	-24	.89	1.81	.22
1898	24.2	62	-18	1.20	3.65	.10
1899	12.2	75	-40	.89	4.32	.12
1900	14.8	60	-27	1.30	4.57	.18
1901	17.5	49	-21	1.01	3.00	.12
1902	17.6	62	-21	.73	2.39	.02
1903	19.8	56	-21	1.18	3.25	.30
1904	14.8	70	-26	.41	1.99	T
1905	12.8	69	-41	1.57	2.97	.44
1906	23.6	66	-32	1.29	2.91	.20
1907	25.0	65	-31	.71	1.95	.06
1908	24.3	59	-16	1.69	3.95	.23
1909	26.2	62	-26	1.54	4.72	.30
1910	17.8	58	-21	.46	2.09	T
1911	27.3	71	-13	2.76	5.46	.50
1912	18.1	57	-30	1.21	3.25	.04
1913	20.2	70	-24	.82	2.39	.07
1914	16.8	59	-29	.87	1.99	.32

T indicates a trace. – indicates temperature below zero.

MARCH.

March, 1914, in Iowa was not an unusual month; in fact the climatological conditions were rather typical. The chief features were the cold wave at the beginning of the month, the warm springlike weather two weeks later, and the cloudy, showery period during the closing days. Both the mean temperature and average precipitation were near the normal, while the snowfall was light, averaging less than two inches.

The cold wave already referred to was the culmination of the severe wind storm that passed over the state on February 28th; it caused the coldest weather of the month in all parts of the state, except a small area in the extreme southwestern portion. On the morning of the 1st the temperature in northern Iowa ranged from zero to 5° below, and in the central and southern sections, from zero to 10° above. A five-day period of warm pleasant weather began on the 12th; the day temperatures at this time were unusually high for so early in the season, reaching

70° even in northern Iowa. At Dubuque the maximum temperature of the 15th (70°) is the highest recorded at that station during the first 15 days of March in the last 20 years. Many evidences of spring were noted at this time; grass began to grow, insects were seen, and the general appearance of migratory birds took place. Most of the ice in rivers and streams disappeared during this period. Some field work on farms was accomplished, and a little gardening was done. Growth of vegetation was checked by a return to cool weather on the 17th. The closing days of the month were marked by cloudy, damp, showery weather; at this time occurred the first rains of the season, and thundershowers were numerous. The moisture was of great benefit, but retarded outdoor work.

PRESSURE.—The mean sea-level pressure for the State was 30.11 inches; the highest recorded was 30.64 inches, at Sioux City, on the 11th; the lowest recorded was 29.42 inches, at Omaha, Neb., on the 24th.

TEMPERATURE.—The monthly mean for the State, 108 stations reporting, was 34.7°, or 1.4° higher than the normal. The month was milder than usual over the entire state, the excess of mean temperature being greatest in northwestern Iowa, where it was between 2° and 3°. Keokuk, with a mean temperature of 39.0°, was the warmest point, and Northwood, a station in Worth county, with a mean of 29.6°, the coldest point. The lowest monthly temperatures at the various stations occurred on the 1st, except in three cases, the lowest temperature reported being —5°, at Estherville, Emmet county, and at Northwood, Worth county. All the monthly highest temperatures, except that at Keokuk, occurred some time during the warm spell at the middle of the month; the highest temperature reported was 78°, at Lamoni, on the 15th.

HUMIDITY.—The mean relative humidity for the State was 74 per cent, or practically the normal figure. The average at 7 a. m. was 80 per cent; at 7 p. m., 67 per cent. The monthly averages at the several stations were as follows: Charles City, 82; Davenport, 77; Des Moines, 71; Dubuque, 76; Keokuk, 76; Sioux City, 70; Omaha, Neb., 70.

PRECIPITATION.—The average for the State, 116 stations reporting, was 1.69 inches, or 0.08 inch less than the normal. In northern Iowa there was an average deficiency of two-fifths of an inch, but in central and southern Iowa a slight excess prevailed. The greatest amounts occurred in the extreme eastern part of the state and over a small area in the southwest, where more than 3 inches were reported. The greatest amount was 3.84 inches, at Clinton. The northwestern part of the state was driest, less than an inch occurring in several counties. Lake Park reported the least amount, 0.28 inch. There were 3 fairly well defined precipitation periods. The first covered the 5th-10th; the second, the 17th-21st; and the last, the closing week. Practically all the precipitation of the first two periods was in the form of snow, while that of the last period was rain. A large percentage of the month's total amount occurred in the last period. Thunder showers were quite numerous at this time, and in a few cases rain fell at an excessively heavy rate. At Davenport on the night of the 28th, 0.75 inch occurred in 20 minutes. The average number of rainy days was 7.

Snowfall.—The average for the State was 1.8 inches, or 3.2 inches less than the normal. The greatest amount reported was 18.0 inches, at Northwood, while a few stations had only traces.

Wind.—Northwesterly winds prevailed, and the movement was less than usual for one of the windiest months of the year. The windiest days were the 6th, 17th and 24th. The highest velocity reported was 42 miles an hour, at Sioux City, on the 17th.

Sunshine and Cloudiness.—About the normal amount of sunshine prevailed for the state as a whole. The percentages at the various stations were as follows: Charles City, 54; Davenport, 57; Des Moines, 64; Dubuque, 55; Keokuk, 51; Sioux City, 54; Omaha, Neb., 55. The average number of clear days was 12; partly cloudy, 8; cloudy, 11.

Miscellaneous.—Sleet was reported on the 4th, 5th, 6th, 17th and 26th; fog occurred on the last four days; and thunder was heard from the 23d to the 31st, inclusive, except on the 30th.

COMPARATIVE DATA FOR THE STATE—MARCH.

Year	Temperature			Precipitation		
	Mean	Highest	Lowest	Average	Greatest	Least
1890	28.0	75	-24	1.57	3.67	.32
1891	26.8	66	-19	2.60	4.58	1.33
1892	31.9	48	- 6	2.22	4.58	.57
1893	31.8	84	- 8	2.14	4.40	.64
1894	41.0	84	- 5	2.03	4.52	.26
1895	34.4	94	-11	0.83	2.60	.22
1896	30.9	81	-12	1.10	3.99	.16
1897	32.0	72	-22	2.39	6.16	.29
1898	37.5	72	- 2	1.94	6.21	.33
1899	23.0	75	-16	1.62	5.90	.37
1900	30.7	81	-13	2.06	5.15	.45
1901	34.2	76	- 8	2.64	5.25	.70
1902	39.1	79	-12	1.45	4.33	.13
1903	38.8	82	6	1.38	3.90	.15
1904	34.8	78	3	2.18	4.57	.50
1905	41.5	84	1	2.04	3.70	.39
1906	27.1	65	-14	2.34	4.55	.58
1907	40.6	92	- 7	1.35	5.05	.23
1908	37.9	85	- 8	1.58	3.74	.45
1909	32.5	71	-15	1.53	5.00	.28
1910	48.9	92	-10	0.17	1.32	.00
1911	39.4	83	2	0.93	4.84	T
1912	24.9	70	-19	2.01	5.25	.60
1913	31.9	78	-23	2.48	5.88	.74
1914	34.7	78	- 5	1.69	3.84	.28

T indicates a trace. – Indicates temperature below zero.

APRIL.

For the State, as a whole, the climatic conditions of the month closely approximate the normals for April. While there were periods when the departures from the normal were quite marked, the averages for the month vary but little from the normals. There was a deficiency of only 0.1° in temperature and 0.34 inch in precipitation. The first twelve days were cold and mostly cloudy, but there was not much precipitation during that period. In fact the month was considerably drier than usual until the 24th, although there were many light showers on the 1st, from the 4th to the 6th, 10th, 15th, and 18th to 19th, but from the 24th to the 28th rainfall was general and at many stations heavy. Nearly all of the precipitation came in the form of showers, but light snow flurries occurred in all parts of the State on the 4th, 5th, 10th or 19th. Much warmer weather prevailed generally during the latter half of the month, and from the 15th to 17th and 25th to 27th it was unusually warm. The month, as a whole, was favorable for all out-door pursuits. The bulk of the small grain was sown by the 18th, and by the end of the month it was up and showed a good stand. Potatoes were planted and a large area was prepared for corn. Fruit trees were in blossom in the southern counties, and shade and forest trees were becoming green in all parts of the State. Owing to a great amount of fall plowing and the favorable conditions prevailing this spring, farm work is farther advanced than usual at the close of April.

PRESSURE.—The mean sea-level pressure for the State was 30.00 inches. The highest recorded was 30.53 inches, at Charles City, on the 30th; the lowest, 29.44 inches, at Sioux City, on the 17th, and at Charles City on the 18th.

TEMPERATURE.—The monthly mean temperature for the State, as shown by the records of 107 stations, was 48.6°, or 0.1° below the normal. This is the nearest approach to the normal for April ever before recorded since state-wide observations began in 1890. The first half of the month was considerably below the normal, and readings below the freezing point were recorded in all parts of the State on numerous dates. The 8th and 9th were, however, the coldest days except in the extreme northwestern counties where the lowest readings were recorded on the 4th or 5th. The lowest temperature reported was 11° at Lake Park on the 8th. Higher temperatures prevailed during the latter half of the month, and the readings from the 15th to the 17th and from the 24th to the 27th were decidedly above the average; the maximum occurring at most stations on the 16th, 17th or 26th. The highest temperature reported was 88° at four stations. Another cool wave spread over the State during the last three days of the month, which resulted in freezing temperatures in Palo Alto and Pocahontas counties on the 30th.

HUMIDITY.—The average relative humidity for the State at 7 a. m. was 76 per cent, and at 7 p. m. 58 per cent. The mean for the month was 67 per cent, or slightly more than the normal. The greatest monthly mean was 76 per cent at Charles City, and the least 64 per cent at Dubuque.

PRECIPITATION.—The average for the State, 115 stations reporting, was 2.52 inches, or 0.34 inch less than the normal. Geographically the distribution was quite uniform, the average amounts for the northern, central and southern districts being 2.64, 2.60 and 2.32 inches, respectively. The greatest amounts were recorded in Greene and Carroll counties, where the rainfall was heavy on the 27th and 28th. The distribution during the month was uneven. In fact, the first and second decades were unusually dry, there being only light showers prior to the 24th. The bulk of the precipitation came on the 26th, 27th or 28th, during which time the showers were copious to heavy and were quite general. There were no damaging downpours. The average number of days with 0.01 inch or more was 8.

Snowfall.—The average for the State was 0.3 inch, or 1.6 inches less than the normal. This is, with five exceptions, the least amount recorded in April since 1892.

Wind.—The prevailing direction of the wind was from the northwest. There were no wind storms of importance, but brisk to high winds prevailed on the 17th and 18th which caused considerable inconvenience in seeding small grain by causing dust storms over plowed fields. The highest velocity recorded was 52 miles per hour, from the northwest, at Sioux City, on the 10th. High winds also prevailed on the 27th.

Sunshine and Cloudiness.—For the State, as a whole, the percentage of sunshine received was somewhat below the normal; but there was a deficiency of 19 per cent at Charles City and 7 per cent at Sioux City, indicating more cloudiness over the northern than there was over the southern part of the state. The average number of clear days was 10; partly cloudy, 8; cloudy, 12.

Miscellaneous Phenomena.—Sleet occurred in Fremont and Cerro Gordo counties on the 5th, and in Plymouth county on the 19th. Hail occurred in Cerro Gordo county on the 10th; in Cerro Gordo, Dallas, Union, and Wayne counties on the 18th; in Warren county on the 19th; Cass county on the 24th; and in Palo Alto, Kossuth and Hancock counties on the 26th. Thunderstorms were quite general on the 17th, 18th, 23rd, 24th, 26th, and 27th, and in a few localities on the 1st, 6th, 15th, and 28th.

Rivers.—The rivers in this section did not change materially during the first three weeks of the month, and were low for the season during that period. Owing to moderately heavy rains, they rose steadily during the last week and in all cases the highest stage of the month was recorded on the 30th.

COMPARATIVE DATA FOR THE STATE—APRIL.

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	Snowfall	With precipitation .01 in.	Clear	Partly cloudy	Cloudy
1890	51.8	+3.1	88	2	1.80	—1.06	4.46	0.38	------	6	14	9	7
1891	50.6	+1.9	93	13	2.15	—0.71	5.06	0.59	------	8	14	7	9
1892	45.4	—3.3	88	14	4.75	+1.89	8.38	2.43	5.7	9	8	9	13
1893	45.5	—3.2	96	15	4.21	+1.35	8.51	1.24	6.0	10	8	9	13
1894	51.7	+3.0	93	12	3.07	+0.21	6.91	0.55	0.2	9	11	11	8
1895	54.2	+5.5	98	8	2.62	—0.24	5.88	0.28	2.1	5	14	8	8
1896	54.5	+5.8	94	10	5.02	+2.16	9.67	2.35	4.5	11	11	10	9
1897	47.9	—0.8	89	19	5.35	+2.49	9.86	2.22	T	11	9	9	12
1898	48.1	—0.6	91	14	2.56	—0.30	4.82	0.27	T	8	13	9	8
1899	48.9	+0.2	89	1	2.40	—0.46	5.76	0.56	2.0	7	12	11	7
1900	52.2	+3.5	89	19	2.67	—0.21	6.62	0.43	0.9	6	12	9	9
1901	49.9	+1.2	92	15	1.79	—1.07	3.47	0.66	2.0	5	14	8	8
1902	48.2	—0.5	96	9	1.71	—1.15	4.15	0.40	T	5	14	11	5
1903	49.8	+1.1	86	17	2.98	+0.12	6.00	0.74	0.8	9	11	9	10
1904	44.1	—4.6	86	13	3.63	+0.77	8.97	1.52	1.4	7	15	6	9
1905	47.5	—1.2	90	10	3.03	+0.17	5.49	0.63	1.2	8	12	8	10
1906	52.5	+3.8	94	22	2.42	—0.44	5.55	0.53	0.6	8	14	9	7
1907	41.5	—7.2	80	10	1.32	—1.54	3.22	0.24	2.7	6	12	8	10
1908	50.5	+1.8	91	8	2.21	—0.62	4.59	0.67	0.3	8	14	8	8
1909	43.8	—4.9	86	14	4.58	+1.72	9.43	0.83	3.1	12	9	9	12
1910	52.5	+3.8	99	15	1.48	—1.38	4.86	0.10	3.0	7	14	7	9
1911	46.7	—2.0	86	3	3.09	+0.23	6.04	1.33	3.6	9	11	8	11
1912	49.9	+1.2	84	20	2.66	—0.20	5.66	0.78	1.1	8	13	8	9
1913	50.2	+1.5	88	16	3.28	+0.42	7.43	1.12	2.7	9	15	5	10
1914	48.6	—0.1	88	11	2.52	—0.34	5.03	0.37	0.3	8	10	8	12

MAY.

The month was characterized by cool weather during the first and moderately warm weather during the latter half, and by numerous torrential rains, although there was a decided deficiency of rainfall for the State, as a whole. The month was, however, unusually favorable for all out-door operations, and farm work progressed rapidly. The bulk of the corn was planted by the 23d, and by the close of the month much of it has been cultivated once and some of it twice. Frost was quite general over the northern two-thirds of the State, between the 12th and 14th, but no damage was done except to tender garden truck. Destructive wind squalls occurred in many localities on the 3d, and on the night of the 10th-11th, which blew down wind-mills, silos and small buildings, and caused the death of one man near Camanche on the 3d. Most of the wind squalls attended severe electrical storms, and were accompanied by excessive rainfall and, in some cases, by hail. The heavy rains caused considerable damage by floods and soil erosion, and the hail was destructive to fruits, garden truck, meadows and green houses. The lack of moisture in the southern counties was detrimental to all crops except corn, which was in fine condition and growing rapidly at the close of the month.

PRESSURE.—The mean sea-level pressure for the State was 30.06 inches. The highest recorded was 30.46 inches, at Dubuque, on the 15th; the lowest, 29.54 inches, at Sioux City, on the 3d.

Temperature.—The monthly mean temperature for the State, as shown by the records of 111 stations, was 62.2°, or 1.7° above the normal. This has been exceeded but five times during the past 25 years. The first 17 days were unusually cool, and light frost and freezing temperatures occurred on several dates in many localities. The 2d, 8th, 12th, 13th and 15th were the coldest days; the lowest reading, 25° being recorded on the 13th at Washta. After the 17th the temperature was above the normal most of the time, and the excess for the month was made up during this period. The highest temperature was recorded at most stations on the 26th; the highest reading being 96° at Cedar Rapids.

Humidity.—The average relative humidity for the State, at 7 a. m. was 74 per cent, and at 7 p. m. 54 per cent. The mean for the month was 64 per cent, or about 4 per cent less than the normal. The greatest monthly mean was 73 per cent at Charles City, and the least, 60 per cent at Davenport.

The average for the State, 118 stations reporting, was 3.31 inches, or 1.26 inches less than the normal. By sections the averages were as follows: Northern, 4.44 inches, or 0.04 inch less than the normal; Central, 3.52 inches, or 1.07 inches less than the normal; Southern, 1.96 inches, or 2.68 inches less than the normal. All of the rain came in the form of local showers, many of them being excessive. At Des Moines, on the 10th-11th, 2.58 inches fell in 3 hours and 19 minutes; on the 10th 1.22 inches fell in 24 minutes; on the 11th 1.20 inches fell in 18 minutes; and on the 23d, 1.31 inches fell in 29 minutes.

Precipitation.—The rainfall was light over the southern three tiers of counties, except over small areas in Jefferson and Madison counties, where heavy local showers occurred which did more harm than good. Over nine counties extending from Montgomery and Page eastward to Lucas and Decatur the rainfall was decidedly deficient, and within that area all crops, except corn, suffered from the lack of moisture. A few flakes of snow fell at Algona and Britt on the 7th. Measurable precipitation occurred on an average of 10 days.

Wind.—The prevailing direction of the wind was from the south. The highest velocity recorded was 50 miles per hour, from the north, at Sioux City, on the 23d. Wind squalls occurred on several dates, and were destructive in many localities. The squalls accompanied severe electrical storms and were attended in many cases by hail.

Sunshine and Cloudiness.—The average duration of sunshine was about 71 per cent, or about 8 per cent more than the normal. The average number of clear days was 14; partly cloudy, 11; cloudy, 6.

Thunderstorms occurred on the 3d, 4th, 6th, 9th, 10th, 11th, 20th, 22d, 23d, 24th, 25th, 26th, 27th, 28th, 29th and 31st.

Hail occurred on the 3d, 7th, 10th and 11th.

Rivers.—There has been no "Spring Rise" in the rivers of this section this year, but there has been a fair boating stage throughout the month.

COMPARATIVE DATA FOR THE STATE—MAY.

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	Snowfall	With precipitation .01 in.	Clear	Partly cloudy	Cloudy
1890	57.7	— 2.8	90	26	3.56	—1.01	6.44	1.61	------	9	10	13	8
1891	58.3	— 2.2	94	21	3.18	—1.39	7.10	1.46	------	8	14	9	8
1892	54.0	— 6.5	88	29	8.77	+4.20	12.64	4.87	T	16	5	9	17
1893	56.6	— 3.9	96	26	3.45	—1.12	5.82	1.65	0	9	13	9	9
1894	61.1	+ 0.6	96	22	1.87	—2.70	4.77	0.33	0	6	17	10	4
1895	61.7	+ 1.2	104	24	3.19	—1.38	5.79	0.84	0	9	11	12	8
1896	65.5	+ 5.0	100	34	6.69	+2.12	11.79	3.40	0	12	11	12	8
1897	58.5	— 2.0	96	20	1.92	—2.65	3.59	0.21	0	5	16	10	5
1898	59.6	— 0.9	92	26	4.67	+0.10	7.82	2.22	0	12	9	10	12
1899	60.2	— 0.3	90	27	6.23	+1.66	11.47	3.09	0	13	9	12	10
1900	63.2	+ 2.7	98	22	3.31	—1.26	6.98	0.96	0	8	14	10	7
1901	60.7	+ 0.2	95	28	2.35	—2.22	4.57	0.72	0	7	16	9	6
1902	63.8	+ 3.3	97	25	5.39	+0.82	18.04	0.87	0	13	10	12	9
1903	61.6	+ 1.1	91	24	8.55	+3.98	15.45	2.88	0	16	9	12	10
1904	59.6	— 0.9	93	27	3.78	—0.79	8.15	1.50	0	8	13	10	8
1905	58.3	— 2.2	88	28	5.95	+1.38	10.83	2.57	0	14	12	11	8
1906	60.8	+ 0.3	95	24	3.54	—1.03	10.72	0.89	0	11	13	10	8
1907	53.5	— 7.0	96	14	3.48	—1.09	7.68	0.71	1.0	10	11	10	10
1908	59.4	— 1.1	93	13	8.34	+3.77	14.33	1.33	0	15	9	11	11
1909	57.9	— 2.6	97	18	4.34	—0.23	7.85	1.86	0.1	9	12	12	7
1910	55.4	— 5.1	89	18	3.41	—1.16	6.91	1.29	T	10	15	7	9
1911	64.9	+ 4.4	98	23	3.76	—0.81	8.73	0.42	0.7	9	16	9	6
1912	62.7	+ 2.2	97	29	3.33	—1.24	6.41	0.72	0	10	14	11	6
1913	59.4	— 1.1	102	30	6.24	+1.67	10.25	3.14	0	13	11	8	12
1914	62.2	+ 1.7	98	25	3.31	—1.26	6.90	0.30	T	10	14	11	6

JUNE.

From the viewpoint of the agriculturist, June was an exceptionally favorable month over the larger part of the State. There were, however, some objectionable features of a local character, such as damaging wind squalls, electrical storms, excessive rainfall, drouth, and in a few places hailstorms. The temperature was all that could be desired for crop growth, but the rainfall was unevenly distributed. Over the northern and central districts there was an excess of precipitation, amounting to 2.51 and 1.76 inches respectively, while in the southern counties there was a deficiency of .71 inch. The rain came in the form of showers and many of them were attended by thunderstorms, during which lightning caused considerable damage to buildings. The heavy and excessive rains in the northern part of the State delayed the cultivation of corn and flooded the bottom lands, while in the southern districts, grass, small grain, and early potatoes were suffering from lack of moisture. But for the state as a whole crops, and especially corn, probably never were in better condition at the close of June than they were this year. Corn made remarkably rapid growth, and at the close of the month the bulk of the crop was laid by, with fields in excellent condition.

Pressure.—The mean sea level pressure for the State was 29.93 inches. The highest recorded was 30.34 inches, at Dubuque, on the 16th; the lowest, 29.49 inches at Sioux City, on the 4th.

Temperature.—The monthly mean temperature for the State, as shown by the records of 108 stations, was 72.2°, or 3.1° higher than the normal. The highest monthly mean was 77.6° at Leon; the lowest was 67.2° at Elma and Estherville. The highest temperature reported in the State, was 101° at Burlington on the 9th and 26th and at Centerville on the 9th, and the lowest was 40° at Alton on the 2d and at Monroe on the 17th. The temperature was quite uniform throughout the month, which will account for the unusually rapid growth of vegetation.

Humidity.—The average relative humidity for the State at 7 a. m. was 76 per cent, and at 7 p. m., 59 per cent. The mean for the month was 68 per cent, or about 2 per cent less than the normal. The highest monthly mean was 70 per cent, at Dubuque, and the lowest, 65 per cent, at Des Moines.

Precipitation.—The average for the State, 116 stations reporting, was 5.57 inches, or 1.19 inches more than the normal. By sections the averages were as follows: Northern, 6.94 inches, or 2.51 inches more than the normal; Central, 6.08 inches, or 1.76 inches more than the normal; Southern, 3.68 inches, or 0.71 inch less than the normal. The greatest amount reported from any station was 13.24 inches at Osage, and the least 1.17 inches at Bonaparte. The greatest amount in any 24 consecutive hours, 6.31 inches, occurred at Osage. During 12 hours and 13 minutes, 4.33 inches fell at Davenport on the 4th-5th.

The rainfall was well distributed throughout the month, except in many localities over the southern counties, where but little rain fell during the latter half of the month. Measurable precipitation occurred on an average of 13 days.

Wind.—The prevailing direction of the wind was from the south. The highest velocity recorded was 67 miles an hour, from the south, at Sioux City, on the 23d. As in May, wind squalls were frequent, and damaging in many localities.

Sunshine and Cloudiness.—The average duration of sunshine was about 70 per cent, or about 5 per cent more than the normal. The average number of clear days was 12; partly cloudy 14; cloudy 4.

Miscellaneous Phenomena.—Thunderstorms occurred at some place in the state on every day of the month, except the 2d, 16th, and 29th, and hail fell on the 4th, 5th, 6th, 10th, 12th, 14th, 21st, 22d, 24th, 25th and 26th.

Rivers.—Owing to heavy rains in northern Iowa, Minnesota, Wisconsin, and the Dakotas, there was a moderately high stage of water in all rivers, but no damaging floods occurred except in some of the smaller streams in the northern part of the State, where bottom lands were flooded and crops were more or less damaged.

COMPARATIVE DATA FOR THE STATE—JUNE.

YEAR	Temperature				Precipitation				Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	With precipitation .01 in.	Clear	Partly cloudy	Cloudy
1890	72.7	+3.6	106	44	7.76	+3.38	16.53	1.57	11	12	10	8
1891	69.1	0.0	99	37	5.39	+1.01	19.88	1.68	11	8	10	12
1892	69.2	+0.1	102	42	5.19	+0.81	14.16	0.67	10	12	11	7
1893	71.2	+2.1	100	40	3.91	—0.47	7.56	1.36	8	15	11	4
1894	73.2	+4.1	104	34	2.67	—1.71	6.20	0.57	7	16	10	4
1895	69.7	+0.6	102	34	4.32	—0.06	9.26	0.98	10	11	11	8
1896	69.1	0.0	100	40	3.11	—1.27	7.89	0.81	9	12	13	5
1897	69.1	0.0	103	29	3.81	—0.57	9.38	1.03	10	10	12	8
1898	71.4	+2.3	99	42	4.72	+0.34	12.48	1.90	9	13	10	7
1899	70.7	+1.6	100	42	5.04	+0.66	11.99	1.10	10	12	13	5
1900	69.7	+0.6	102	38	3.98	—0.40	12.35	0.67	5	17	10	3
1901	72.3	+3.2	106	30	3.71	—0.67	7.84	1.05	9	15	11	4
1902	65.2	—3.9	97	32	7.16	+2.78	16.04	1.46	14	8	11	11
1903	64.6	—4.5	96	30	2.86	—1.52	6.04	0.75	10	13	10	7
1904	67.1	—2.0	94	35	3.45	—0.93	8.35	0.44	7	13	10	7
1905	69.9	+0.8	100	36	5.53	+1.15	14.89	1.80	10	12	11	7
1906	67.9	—1.2	99	37	3.92	—0.46	8.27	1.48	8	15	10	5
1907	66.5	—2.6	98	36	5.35	+0.97	9.33	2.07	11	14	9	7
1908	67.1	—2.0	94	35	5.66	+1.28	11.88	1.77	13	12	10	8
1909	69.1	0.0	96	40	6.41	+2.03	13.30	2.80	13	12	10	8
1910	69.5	+0.4	105	33	1.99	—2.39	5.51	0.05	7	18	7	5
1911	75.7	+6.6	108	36	1.82	—2.56	6.28	0.06	5	20	8	2
1912	66.2	—2.9	101	34	2.74	—1.64	5.71	0.78	7	15	9	6
1913	71.5	+2.4	102	33	3.31	—1.07	8.95	0.74	7	19	8	3
1914	72.2	+3.1	101	40	5.57	+1.19	13.24	1.17	13	12	14	4

JULY.

The month goes on record as one notable for heat and dryness. With the single exception of the memorable July of 1901, it was the warmest July in the 25 years' climatological history of the State. Moreover, with the exception noted, August, 1900, is the only other month of record warmer than the one under discussion. There has been less precipitation in other summer months than in July this year, but the total number of such months (June, July and August considered) is but 10 in a 25 years' record.

The heat was less endurable than usual owing to the light winds that prevailed, the month being one of the least windy Julies of record. But few severe storms occurred, the most important being those of the 16th and 27th. The former was the more widespread, and much damage was done to corn and grain. However, the beneficial effects of the accompanying rainfall far exceeded the loss by wind and hail.

A saving factor in the drouthy conditions of the month was that the rainfall came at opportune times, vegetation deriving the maximum possible benefits. The great staple corn was in such excellent shape at the close of June that it withstood the unfavorable weather remarkably well, but considerable deterioration took place in southern counties as the month progressed. The weather conditions were good for haying and the harvesting of small grains, and by the close of the month this work had been practically completed. At the same time threshing was well advanced. The soil was too dry for plowing, and pastures were cut short by the drouth, especially in southern counties. In some places stock had to go on feed. Reports of wells going dry came from several sections.

PRESSURE.—The mean sea level pressure for the State was 29.98 inches. The highest recorded was 30.27 inches, at Dubuque, on the 29th; the lowest was 29.56 inches, at Des Moines, on the 16th.

TEMPERATURE.—The monthly mean for the State, 107 stations reporting, was 76.6°, or 2.5° higher than the normal. An excess of temperature prevailed at all stations, but the departures were greatest in southern sections. Burlington, with a mean temperature of 80.6° was the warmest point in the State, and Elma, with a mean of 72.4°, the coolest.

Most of the highest monthly temperatures at the individual stations occurred on the 11th, 12th or 27th. In general these values were slightly above 100° over the southern half of the State, and slightly below 100° over the northern half. The highest temperature reported was 109°, at Centerville, on the 12th. The next highest was 106°, at Bedford, on the 27th. The weather was coolest at the beginning and close of the month, and on or about the 18th. About 90 per cent of the lowest monthly temperatures at the various stations occurred at the last mentioned time. The lowest reported was 43°, at Washta, on the 3d, and at Mason City, on the 18th.

HUMIDITY.—The average relative humidity for the State at 7 a. m. was 77 per cent, and at 7 p. m., 53 per cent. The mean for the month was 65 per cent, or about 3 per cent less than the normal. The highest monthly mean was 72 per cent, at Charles City, and the lowest, 62 per cent, at Davenport.

PRECIPITATION.—The average for the State, 114 stations reporting, was 2.27 inches, or 1.69 inches less than the normal. Only 4 other Julies since 1889 have been drier. The precipitation was deficient over 90 per cent of the State, but the Central Section was driest. There were two chief areas where there was an excess of moisture, one covering most of Pocahontas, Calhoun, Sac and Crawford counties, the other, Mahaska, Monroe, Wapello, Wayne, Appanoose and Davis counties. The greatest amount reported was 6.50 inches, at Oskaloosa, and the least, 0.44 inch, at Davenport. In point of time the precipitation of the month was exceptionally well distributed. The 6th, 12th, 16th, 24th and 30th were the dates of most general occurrence. There was an average of 5 rainy days for each station, this being 3 fewer than the normal.

WIND.—The prevailing direction of the wind was from the south. The highest velocity recorded was 35 miles an hour, from the north, at Sioux City, on the 16th. The velocities were among the lightest of record for July.

SUNSHINE AND CLOUDINESS.—The average percentage of the possible amount of sunshine was 81, or about 9 per cent more than the normal. The average number of clear days was 20; partly cloudy, 8; cloudy, 3.

MISCELLANEOUS PHENOMENA.—Thunder was heard at some place in the State on every day of the month, except the 2d, 8th, 14th, 19th and 20th, and hail fell on the 15th and 16th.

RIVERS.—As the result of heavy rains in Minnesota and Wisconsin in June, the Mississippi River rose rapidly during the first half of the month, reaching a stage of 14.4 feet at Dubuque on the 12th, and 10.6 feet at Davenport on the 13th. With three exceptions the stage at Dubuque was the highest in July in 40 years. Steadily falling stages prevailed at Dubuque after the 12th, and at Davenport after the 15th.

COMPARATIVE DATA FOR THE STATE—JULY.

YEAR	Temperature				Precipitation				Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	With precipitation .01 in.	Clear	Partly cloudy	Cloudy
1890	75.6	+1.5	110	45	1.98	—1.98	5.00	0.37	3	18	8	5
1891	68.5	—5.6	99	41	4.22	+0.26	8.20	1.67	8	13	13	5
1892	73.0	—1.1	104	38	5.29	+1.33	12.86	1.71	9	16	10	5
1893	75.0	+0.9	102	47	3.33	—0.63	8.84	1.49	7	19	10	2
1894	76.4	+2.3	109	39	0.63	—3.33	3.50	T	3	22	8	1
1895	72.1	—2.0	104	35	3.40	—0.56	10.10	0.45	7	15	12	4
1896	73.6	—0.5	104	42	6.90	+2.94	12.67	1.61	9	14	11	6
1897	75.6	+1.5	106	42	3.26	—0.70	7.60	1.01	6	18	10	3
1898	73.4	—0.7	102	42	2.98	—0.98	12.88	0.55	7	19	9	3
1899	73.1	—1.0	101	38	3.07	—0.89	8.66	0.42	7	16	10	5
1900	73.4	—0.7	102	37	6.15	+2.19	18.45	1.80	9	16	10	5
1901	82.4	+8.3	113	46	2.34	—1.62	5.97	0.27	5	21	9	1
1902	73.1	—1.0	99	41	8.67	+4.71	13.57	4.82	13	14	10	7
1903	72.9	—1.2	100	40	4.83	+0.87	12.72	0.94	9	17	9	5
1904	70.6	—3.5	100	38	4.41	+0.45	11.97	1.28	10	16	9	6
1905	70.6	—3.5	102	40	2.91	—1.05	7.08	0.69	9	14	10	7
1906	70.9	—3.2	102	42	3.04	—0.92	7.05	0.26	8	18	10	3
1907	73.7	—0.4	102	41	7.27	+3.31	13.66	3.97	13	16	11	4
1908	73.0	—1.1	100	42	3.66	—0.30	9.21	0.70	8	16	10	5
1909	72.3	—1.8	102	46	4.77	+0.81	12.20	1.20	10	15	8	8
1910	74.5	+0.4	108	43	1.86	—2.10	5.69	0.12	7	19	8	4
1911	75.5	+1.4	111	38	2.27	—1.69	6.62	0.08	7	18	10	3
1912	74.6	+0.5	103	38	3.71	—0.25	7.56	1.17	10	17	10	4
1913	76.1	+2.0	108	45	1.82	—2.14	6.23	T	5	21	8	2
1914	76.6	+2.5	109	43	2.27	—1.69	6.50	0.44	5	20	8	3
Normals	74.1		104	41	3.96		9.39	1.08	8	17	10	4

AUGUST.

The hot and dry weather that prevailed during July continued until the 18th of August, culminating on the 16th, 17th and 18th with high temperatures and hot, dry winds. From the 19th to the close of the month more favorable conditions obtained. The temperature was generally moderate and showers were more frequent. The 16th and 17th were among the worst days ever experienced in Iowa. The temperature was near or above 100 degrees, with wind velocities ranging from 25 to 36 miles per hour, bright sunshine and extremely low humidity. All vegetation, especially over the southern half of the state, suffered greatly by these adverse conditions, and corn probably never deteriorated more in 48 hours than it did on those two days. While August will go on record as a dry month, and great damage was done by the drouth, yet rain fell at some point in the state on every day of the month. The showers were, however, widely scattered and of but slight benefit, except in a few localities of small area, until near the close of the month. Copious and quite general showers occurred on the 23d, 27th and 31st, which afforded great relief to vegetation, and put the ground in condition for plowing.

The month closed with severe local wind, rain and electric storms in many localities. Wind did much damage to trees and buildings, and wind and rain seriously injured the corn crop.

PRESSURE.—The mean sea level pressure for the state was 29.96 inches. The highest recorded was 30.37 inches, at Sioux City, on the 26th; the lowest was 29.58 inches, at Sioux City, on the 17th.

TEMPERATURE.—The monthly mean for the state, 113 stations reporting, was 73.7°, or 19° above the normal. The highest monthly mean was 78.1° at Leon; the lowest, 68.5°, at Estherville. The highest temperature reported in the state was 103° at Lamoni, on the 18th and the lowest was 40° at Elma, on the 14th, and Spencer on the 25th. The coolest days were the 14th, 26th, 27th and 28th, and the highest temperatures were recorded on the 8th, 16th, 17th and 22d.

HUMIDITY.—The average relative humidity for the state at 7 a. m. was 78 per cent, and at 7 p. m., 53 per cent. The mean for the month was 66 per cent, or about 6 per cent less than the normal. The highest monthly mean was 76 per cent at Charles City, and the lowest, 61 per cent at Des Moines.

PRECIPITATION.—The average for the state, 121 stations reporting, was 2.19 inches, or 1.49 inches less than the normal. By sections the averages were as follows: Northern, 2.40 inches, or 1.08 inches less than the normal; Central, 1.82 inches, or 1.95 inches less than the normal; Southern, 2.35 inches, or 1.43 inches less than the normal. The greatest amount reported from any station was 4.90 inches at Lake Park, and the least, 0.42 inch at Webster City. The greatest amount in any 24 consecutive hours, 4.30 inches, occurred at Tipton, on the 19th. At Dubuque, on the 31st, 1.03 inches fell in 15 minutes. While rain fell at some place in the state on every day of the month, the showers were generally light, widely scattered and of but little benefit until the 23d, when they were quite general and copious. They were also quite general on the 27th and 31st. Measurable precipitation occurred on an average of 7 days, which equals the normal.

WIND.—The prevailing direction of the wind was from the south. The highest velocity recorded was 52 miles an hour, from the northwest, at Sioux City on the 4th.

SUNSHINE AND CLOUDINESS.—The average percentage of the possible amount of sunshine was 73 per cent, or 4 per cent more than the normal. The average number of clear days was 17; partly cloudy, 10; cloudy, 4.

Miscellaneous Phenomena.—Thunderstorms occurred at some place in the state on every day of the month, except the 1st, 3d and 14th, and hail fell on the 5th, 18th, 19th and 31st.

Rivers.—The Mississippi river from Dubuque to below LaCrosse fell during the first 10 days of the month, and then remained nearly stationary until the close. The average stage was about 4.0 feet, which was sufficient for navigation. Practically all creeks and small streams were dry until near the close of the month.

COMPARATIVE DATA FOR THE STATE—AUGUST.

YEAR	Temperature				Precipitation				Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	With precipitation .01 in.	Clear	Partly cloudy	Cloudy
1890	68.4	—3.4	102	36	3.41	—0.27	6.44	1.02	8	15	10	6
1891	69.1	—2.7	106	34	4.24	+0.56	13.02	1.23	8	13	12	6
1892	71.4	—0.4	102	40	2.24	—1.34	4.69	0.65	5	18	9	4
1893	69.4	—2.4	101	30	2.32	—1.26	6.22	0.40	5	19	9	3
1894	74.6	+2.8	108	38	1.58	—2.10	4.53	T	4	21	8	2
1895	71.9	+0.1	103	37	4.43	+0.75	10.63	0.67	7	17	9	5
1896	71.7	—0.1	104	34	3.52	—0.16	12.25	0.86	8	15	11	5
1897	68.9	—2.9	104	35	1.86	—1.82	4.98	0.47	6	15	11	5
1898	71.2	—0.6	103	40	3.44	—0.24	10.55	0.58	6	17	9	5
1899	74.4	+2.6	100	41	3.68	0.00	10.45	1.12	7	17	10	4
1900	77.4	+5.6	103	44	4.65	+0.97	10.43	1.26	6	18	10	3
1901	73.8	+2.0	105	40	1.29	—2.39	4.46	T	5	20	9	2
1902	69.1	—2.7	98	37	6.58	+2.90	15.47	1.57	11	11	11	9
1903	69.1	—2.7	101	41	6.64	+2.96	17.74	2.55	11	12	10	9
1904	69.1	—2.7	97	35	3.43	—0.25	6.75	0.66	7	17	8	6
1905	74.3	+2.5	104	44	4.05	+0.37	8.47	1.04	9	16	9	6
1906	74.1	+2.3	101	33	3.95	+0.27	10.51	0.92	9	17	9	5
1907	71.1	—0.7	99	37	4.33	+0.65	9.67	1.05	9	17	9	5
1908	70.0	—1.8	101	38	4.77	+1.09	10.55	1.35	9	17	9	5
1909	76.1	+4.3	103	33	1.81	—1.87	8.21	T	5	21	8	2
1910	71.9	+0.1	104	36	3.88	+0.20	11.22	0.37	8	15	10	6
1911	71.7	—0.1	107	34	3.32	—0.36	9.47	0.44	9	16	10	5
1912	71.0	—0.8	101	40	3.78	+0.10	7.90	0.89	10	15	10	6
1913	76.6	+4.8	108	40	2.68	—1.00	7.13	0.08	6	17	10	4
1914	73.7	+1.9	103	40	2.19	—1.49	4.90	0.42	7	17	10	4
Normals	71.8	-------	103	37	3.68	--------	9.07	0.78	7	16	10	5

SEPTEMBER.

September, 1914, will go on record as the wettest month of that name in the history of the state, and, with one exception, July, 1902, it was the wettest month of record since state-wide observations began in 1890. Showers were frequent between the 1st and 24th, and in many localities the rainfall was heavy to excessive; the greatest monthly amount being 16.24 inches at Lenox, and the greatest amount in 24 consecutive hours was 7.78 inches at Cedar Rapids. Notwithstanding the fact that rain fell at some place in the state on every day between the 1st and 24th, inclusive, except the 3d and 19th, there was an excess of sunshine and an absence of damaging frosts; and the month, as a whole, was pleasant and highly favorable for agricultural interests. There was, however, considerable damage done in some localities by wind squalls and excessively heavy rainfall. The long, severe drought of July and August was thoroughly broken and at the close of the month the pastures were as green as in May or June; much fall plowing had been done under favorable conditions; the water supply was replenished, and a large acreage of winter wheat had been seeded.

PRESSURE.—The mean sea level pressure for the State was 30.07 inches. The highest recorded was 30.44 inches, at Dubuque, on the 9th; the lowest was 29.59 inches, at Omaha, Neb., on the 13th.

TEMPERATURE.—The monthly mean for the State, 103 stations reporting, was 64.5°, or 1.1° above the normal. By sections the mean temperatures were as follows: Northern, 63.1°, or 1.3° above normal; Central, 64.5°, or 1.0° above normal; Southern, 65.9°, or 0.9° above the normal. The highest monthly mean was 67.8°, at Northboro, and the lowest monthly mean was 59.8° at Estherville. The highest temperature reported in the State was 99°, at Clarinda and Northboro, on the 5th, and the lowest was 30°, at Washta, on the 30th.

HUMIDITY.—The average relative humidity for the State at 7 a. m. was 85.8 per cent, and at 7 p. m., 67.2 per cent. The mean for the month was 76.5 per cent, or about 3 per cent more than the normal. The highest monthly mean was 84 per cent at Charles City, and the lowest, 73.3 per cent, at Omaha, Neb.

PRECIPITATION.—The average for the State, 111 stations reporting, was 7.88 inches, or 4.52 inches more than the normal. By sections the averages were as follows: Northern, 5.84 inches, or 2.79 inches more than the normal; Central, 8.38 inches, or 4.92 inches more than the normal; Southern, 9.41 inches, or 5.85 inches more than the normal. The greatest amount reported from any station was 16.24 inches, at Lenox, Taylor county, and the least, 2.48 inches, at Lake Park, Dickinson county. The greatest amount in any 24 consecutive hours, 7.78 inches, occurred at Cedar Rapids, Linn county, on the 14th. At Des Moines, on the 16th, .18 inch fell in 5 minutes; .58 inch in 10 minutes; .81 inch in 15 minutes; .95 inch in 20 minutes; 1.02 inches in 25 minutes; 1.21 inches in 35 minutes; 1.56 inches in 40 minutes; 1.68 inches in 45 minutes; 1.80 inches in 50 minutes; 1.98 inches in one hour; 2.37 inches in one hour and 20 minutes, and 3.24 inches fell in one hour and 40 minutes. This was one of the heaviest rainfalls of record but does not quite equal the record for the station. On June 24, 1879, 3.00 inches of rain fell in one hour, and on July 14-15, 1907, 3.22 inches fell in one hour and 30 minutes. Measurable precipitation occurred on an average of 10 days.

WIND.—The prevailing direction of the wind was from the south. The greatest velocity recorded was at the rate of 43 miles per hour from the southwest, at Sioux City, on the 13th.

SUNSHINE AND CLOUDINESS.—The average percentage of the possible amount of sunshine was 68 per cent, or about 5 per cent more than the normal. The average number of clear days was 16; partly cloudy, 7; cloudy, 7.

Miscellaneous Phenomena.—Thunderstorms occurred at some place in the State on the 1st, 2d, 4th, 5th, 7th, 8th, 9th, 10th, 12th, 13th, 14th, 15th, 16th, 17th, 20th, 21st, 22d and 23d. Hail fell at Waukee on the 1st; at Mason City, Nora Springs, Marshalltown, Whitten and Indianola on the 5th, and at Olin and Lenox on the 6th.

Rivers.—The Mississippi River, from Dubuque to La Crosse, Wis., remained nearly stationary during the first fifteen days of the month and rose slowly during the latter half of the month. The lower Des Moines River began to rise rapidly on the 15th, reaching the flood stage at Ottumwa, on the 17th, and falling again after the 20th. Some unprotected lowlands in the vicinity of Keokuk were flooded, but no material damage resulted. At Davenport, the lowest stage of the Mississippi River, 3.1 feet, occurred on the 1st, and the highest stage, 7.1 feet, was recorded on the 16th.

COMPARATIVE DATA FOR THE STATE—SEPTEMBER.

YEAR	Temperature				Precipitation				Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	With precipitation .01 in.	Clear	Partly cloudy	Cloudy
1890	59.3	—4.1	96	23	2.97	—0.39	4.85	1.36	7	13	10	7
1891	67.3	+3.9	104	28	1.33	—2.06	3.60	0.13	4	20	7	3
1892	64.7	+1.3	99	29	1.53	—1.83	4.15	0.16	4	16	8	6
1893	64.7	+1.3	102	18	2.34	—1.02	5.49	0.74	4	20	6	4
1894	65.1	+1.7	100	26	3.57	+0.21	7.43	0.67	8	15	10	5
1895	66.8	+3.4	103	22	3.03	—0.33	7.43	0.85	5	18	8	4
1896	58.5	—4.9	95	22	4.09	+0.73	9.96	1.82	10	11	9	10
1897	70.9	+7.5	106	26	2.04	—1.32	5.88	0.00	4	23	5	2
1898	65.3	+1.9	99	29	2.69	—0.67	8.45	0.41	7	16	9	5
1899	62.5	—0.9	104	15	0.93	—2.43	4.32	T	4	16	9	5
1900	64.4	+1.0	99	26	4.98	+1.62	8.82	2.48	9	15	8	7
1901	63.3	—0.1	102	26	4.77	+1.41	13.62	1.71	9	13	9	8
1902	59.1	—4.3	88	23	4.35	+0.99	10.41	1.65	9	15	6	9
1903	60.8	—2.6	94	28	3.81	+0.45	8.79	1.42	10	14	6	10
1904	64.0	+0.6	94	30	2.78	—0.58	8.33	0.09	7	13	8	9
1905	65.8	+2.4	96	36	3.81	+0.45	13.18	0.50	8	14	8	8
1906	67.2	+3.8	100	27	4.16	+0.80	11.10	0.64	8	16	8	6
1907	62.8	—0.6	98	25	2.75	—1.61	6.06	1.38	8	15	9	6
1908	67.9	+4.5	98	20	1.20	—2.16	3.46	0.25	3	21	6	3
1909	62.4	—1.0	94	30	3.58	+0.22	7.34	1.39	9	14	8	8
1910	63.2	—0.2	99	30	3.59	+0.23	7.43	1.18	9	14	7	9
1911	65.8	+2.4	103	32	5.12	+1.76	13.73	1.19	10	11	9	10
1912	62.1	—1.3	104	24	3.98	+0.62	10.12	0.28	11	12	8	10
1913	64.5	+1.1	107	19	3.31	—0.05	7.44	0.45	9	15	8	7
1914	64.5	+1.1	99	30	7.88	+4.52	16.24	2.48	10	16	7	7
Normals	63.4		99	26	3.36		8.31	0.93	7	15	8	7

OCTOBER.

With the exception of frequent and general showers between the 5th and 14th, and light, scattered showers on the 22d and 23d, the weather was unusually mild and pleasant and favorable for farm and construction work. Showery weather was general from the 5th to the 14th, with some heavy local falls on the 6th, 7th, and 8th; but from the 15th to the close of the month the weather was ideal, with high temperatures prevailing most of the time. The first cool wave of the season spread over the State between the 24th and 27th, causing the first killing frost in all sections, except in the extreme northern corner of the State, where killing frost occurred on the 15th. Light snow flurries, the first of the season, occurred in the eastern counties on the 26th.

The abundance of moisture in the soil, the lateness of the first occurrence of killing frost, and the pleasant weather during the latter half of the month were ideal for farm work. All crops were matured under favorable conditions, and much of the corn crop was harvested. Pastures, meadows and fall sown grains were in excellent condition.

Pressure.—The mean sea level pressure for the State was 34.04 inches. The highest record was 30.52 inches at Sioux City, on the 24th, and the lowest was 20.65 inches, at Sioux City, on the 4th.

Temperature.—The monthly mean for the State, 108 stations reporting, was 55.9°, or 5.1° above the normal, and only 8.6° below the average for September. By sections the mean temperatures were as follows: Northern, 55.0°, or 6.0° above the normal; Central, 55.9°, or 5.0° above the normal; Southern, 56.8°, or 4.2° above the normal. Such a slight variation in the mean temperature of the several districts is unusual. The highest monthly mean was 58.8° at Keokuk, and the lowest monthly mean was 53.6°, at Rock Rapids. The highest temperature reported in the State was 88° at Lenox, on the 1st, and the lowest was 14°, at Washta, on the 27th.

Humidity.—The average relative humidity for the State at 7 a. m. was 88.0 per cent, and at 7 p. m. it was 71.4 per cent. The mean for the month was 79.7 per cent, or about 7 per cent more than the normal. The highest monthly mean was 88 per cent at Charles City, and the lowest, 76 per cent, at Sioux City.

Precipitation.—The average for the State, 116 stations reporting, was 3.23 inches, or 0.77 inch more than the normal. By sections the averages were as follows: Northern, 3.55 inches, or 1.21 inches more than the normal; Central, 3.14 inches, or 0.65 inch more than the normal; Southern, 3.00 inches, or 0.46 inch more than the normal. The greatest amount reported from any station was 6.64 inches, at Corning, and the least, 0.74 inch, at Le Mars. The greatest amount in any 24 consecutive hours, 4.63 inches, occurred at Corning, on the 8th. Showers occurred at some place in the State every day between the 5th and the 14th, with some heavy local falls on the 6th, 7th and 8th. The first snow of the season fell in Scott county on the 26th. Measurable precipitation occurred on an average of 9 days.

Wind.—The prevailing direction of the wind was from the South. The greatest velocity recorded was at the rate of 42 miles per hour from the South, at Sioux City, on the 3d.

Sunshine and Cloudiness.—The average percentage of the possible amount of sunshine was 59 per cent, or about 10 per cent less than the normal. The average number of clear days was 16; partly cloudy, 6; cloudy, 9.

Miscellaneous Phenomena.—Thunderstorms occurred at some place in the State on every day from the 5th to the 13th, inclusive, and in a few localities on the 22d. The first killing frost occurred in the extreme northwestern corner of the State on the 15th, but the first general killing frost did not occur until the 25th or 27th.

Rivers.—The Mississippi River fell slowly from Dubuque to La Crosse, averaging about 5.0 feet.

COMPARATIVE DATA FOR THE STATE—OCTOBER.

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	Snowfall	With precipitation .01 in.	Clear	Partly cloudy	Cloudy
1890	49.2	—1.6	86	16	3.48	+1.02	6.82	1.59	------	7	11	11	9
1891	50.0	—0.8	92	19	2.77	+0.31	6.53	0.85	------	6	18	7	6
1892	54.5	+3.7	96	14	1.55	—0.91	2.58	0.00	0.0	4	21	6	4
1893	52.4	+1.6	94	10	1.28	—1.18	4.56	0.02	0.0	4	16	9	6
1894	51.7	+0.9	90	20	2.67	+0.21	5.25	0.03	0.2	8	14	8	9
1895	46.0	—4.8	88	4	0.47	—1.99	1.38	0.00	T	2	19	8	4
1896	47.9	—2.9	88	12	3.13	+0.67	5.05	1.51	T	5	18	6	7
1897	56.8	+6.0	97	12	1.14	—1.32	3.30	0.03	0.0	4	17	8	6
1898	47.5	—3.3	88	17	3.56	+1.10	5.75	1.27	3.6	8	7	9	15
1899	56.7	+5.9	95	17	1.73	—0.73	4.64	0.15	0.0	5	17	8	6
1900	59.3	+8.5	90	21	3.91	+1.45	8.00	1.20	0.0	7	16	7	8
1901	54.2	+3.4	88	20	1.98	—0.48	4.23	0.45	T	6	17	7	7
1902	53.5	+2.7	83	20	2.54	+0.08	6.66	0.28	T	5	16	8	7
1903	52.2	+1.4	90	16	1.95	—0.51	4.50	0.32	0.0	5	19	6	6
1904	53.1	+2.3	96	16	1.67	—0.79	4.43	0.14	T	6	15	8	8
1905	49.2	—1.6	95	16	3.40	+0.94	5.36	1.20	1.6	8	16	6	9
1906	50.5	—0.3	87	7	1.96	—0.50	4.25	0.50	0.1	6	14	7	10
1907	50.4	—0.4	85	10	1.50	—0.96	3.71	0.30	0.0	5	20	5	6
1908	51.1	+0.3	89	17	3.38	+0.92	8.83	0.58	2.6	8	16	6	9
1909	49.7	—1.1	97	10	2.22	—0.24	4.70	0.48	T	6	16	6	9
1910	55.2	+4.4	93	10	0.77	—1.69	1.73	T	0.1	4	21	4	6
1911	48.7	—2.1	87	14	3.34	+0.88	7.03	0.73	0.6	10	12	8	11
1912	52.2	+1.4	92	16	2.98	+0.52	5.77	1.03	T	6	21	3	7
1913	49.2	—1.6	89	-2	3.03	+0.57	7.29	0.35	1.2	9	15	8	8
1914	55.9	+5.1	88	14	3.23	+0.77	6.64	0.74	T	9	16	6	9
Normals	50.8	-------	90	14	2.46	--------	5.16	0.55	0.4	6	16	7	8

T indicates an amount too small to measure.

NOVEMBER.

Seldom in the past in Iowa has November been so pleasant and agreeable as was the month under discussion. The weather was remarkably mild, dry and sunshiny, resembling in these respects the memorable November of 1904.

The weather was ideal for outdoor work, and in many sections every day was a working day. Corn gathering progressed with but little interruption, and by the close of the month a large percentage of the crop had been cribbed. The general absence of precipitation caused dusty roads in some parts of the State, but the lack of moisture did not materially shorten pasturage for stock, which was out all the month. During the closing week haze and smoke were present, especially in southern

Iowa, and it is believed these conditions were due to the forest fires that prevailed in Arkansas and contiguous territory.

Pressure.—The mean pressure (reduced to sea-level) for the State was 30.10 inches; the highest recorded was 30.62 inches, at Sioux City, on the 19th; the lowest recorded was 29.68 inches, at the same station, on the 14th.

Temperature.—The monthly mean for the State, 108 stations reporting, was 41.0°, or 6.0° higher than the normal. Only four months of the same name in the last 25 years have been warmer. As compared with the normal the temperature averaged highest in the northwestern part of the State, and lowest in the northeastern, but the difference between the greatest and least departure was not large. The highest monthly mean temperature was 46.2°, at Northboro, Page county, and the lowest was 35.4°, at Estherville, Emmet county. The outstanding feature of the temperature conditions was the sudden and severe cold wave of the 18th-19th. Over large areas the temperature on the 19th was the lowest of record for so early in the season, the readings ranging from 6°, at Keokuk, to —4° at several stations in northern Iowa. In most cases the monthly highest temperatures at the various stations occurred on the 2d, 3d or 6th, the readings being above 70° except over the extreme northeast part of the State. The highest reported was 80°, at 3 stations. At Des Moines the maximum of 76° on the 2d equaled the highest previous November temperature at that station. The weather of Thanksgiving Day (26) deserves special mention, the day having been remarkably mild and pleasant.

Humidity.—The mean relative humidity for the State at 7 a. m. was 76 per cent, and 7 p. m. it was 60 per cent. The mean for the month was 68 per cent, or about 6 per cent lower than the normal. The highest monthly mean was 81 per cent, at Charles City, and the lowest, 60 per cent, at Sioux City.

Precipitation.—With the single exception of November, 1904, the current month was the driest November in the last 25 years. The average precipitation for the State was but 0.22 inch, or 1.29 inches less than the normal. No station had as much as one inch, while at 13 stations only traces occurred. Moreover, at Lake Park, Dickinson county, there was no precipitation whatever.

The great bulk of the month's supply of moisture came in three periods, viz., those of the 7th-8th, 14th-15th and 29th-30th. The last named period was the most important, being one of general, light, misty rains. The average number of days with 0.01 inch or more precipitation was 2.

Snowfall.—Some snow fell over much of the State, but only 10 stations reported measurable amounts. The greatest fall was 0.5 inch, at Bedford and Northboro, stations in extreme southwestern Iowa. With the exception of November, 1912, the current November is the only one on record having an average snowfall of only a trace.

Wind.—The prevailing direction of the wind was from the northwest. The highest velocity was at the rate of 39 miles an hour from the northwest, at Sioux City on the 18th. The month was not so windy as usual.

SUNSHINE AND CLOUDINESS.—The mean percentage of the possible amount of sunshine was 68, or about 14 per cent higher than the normal. The average number of clear days was 19; partly cloudy, 6; cloudy, 5.

MISCELLANEOUS PHENOMENA.—Thunder was heard at a few stations, most of them in northeastern Iowa, on the 2d; at Creston, on the 14th, and in extreme eastern Iowa on the 24th.

COMPARATIVE DATA FOR THE STATE—NOVEMBER.

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	Snowfall	With precipitation .01 in.	Clear	Partly cloudy	Cloudy
1890	38.6	+3.6	78	— 2	1.46	—0.05	3.55	0.71	------	3	15	8	7
1891	30.5	—4.5	84	—24	1.70	+0.19	3.64	0.06	------	7	10	8	12
1892	33.3	—1.7	70	— 3	1.10	—0.41	3.16	0.05	1.8	4	11	8	11
1893	34.0	—1.0	86	—13	1.17	—0.34	2.56	0.05	4.6	4	16	8	6
1894	32.7	—2.3	72	— 5	0.92	—0.59	2.42	T	0.4	4	9	11	10
1895	34.3	—0.7	86	—12	1.51	0.00	3.01	0.45	4.9	6	9	8	13
1896	29.6	—5.4	82	—15	1.83	+0.32	4.51	0.16	2.9	6	9	8	13
1897	34.3	—0.7	81	—19	0.66	—0.85	2.24	T	1.2	5	12	8	10
1898	32.2	—2.8	78	—17	1.50	—0.01	3.61	0.33	8.7	6	14	8	8
1899	43.9	+8.9	86	8	1.20	—0.31	2.97	0.13	0.5	5	12	8	10
1900	33.5	—1.5	79	— 6	1.06	—0.45	3.35	T	3.7	6	12	7	11
1901	35.8	+0.8	77	2	0.86	—0.65	2.30	0.20	2.6	3	18	6	6
1902	41.2	+6.2	79	4	2.13	+0.62	4.19	0.16	1.8	7	9	7	14
1903	34.2	—0.8	76	— 5	0.52	—0.99	1.74	T	1.1	3	13	8	9
1904	41.0	+6.0	80	4	0.15	—1.36	0.50	0.00	0.5	1	20	6	4
1905	38.4	+3.4	70	—12	2.84	+1.33	5.30	0.90	0.6	5	16	7	7
1906	35.4	+0.4	76	— 5	2.03	+0.52	3.86	0.35	4.4	8	9	7	14
1907	36.7	+1.7	68	— 4	1.03	—0.48	2.27	0.05	0.9	4	17	6	7
1908	39.3	+4.3	80	5	1.56	+0.05	3.31	0.21	1.4	5	14	7	9
1909	42.4	+7.4	84	— 3	5.39	+3.88	11.48	2.07	6.8	10	10	7	13
1910	33.4	—1.6	76	5	0.34	—1.17	1.03	T	0.7	3	13	9	8
1911	29.9	—5.1	79	— 8	1.42	—0.09	4.99	0.11	1.6	6	11	8	11
1912	40.1	+5.1	77	6	0.98	—0.53	2.38	0.00	T	2	18	8	4
1913	44.1	+9.1	78	10	1.18	—0.33	3.49	0.20	0.4	6	11	7	12
1914	41.0	+6.0	80	—4	0.22	—1.29	0.95	0.00	T	2	19	6	5
Normals	35.0	-------	78	— 5	1.51	--------	3.31	0.25	2.2	5	13	8	9

T indicates an amount too small to measure, or less than .005 inch precipitation and less than .05 inch snowfall.

DECEMBER.

December, 1914, will go on record as a pleasant and agreeable winter month, notwithstanding the fact that it was, with one exception, the coldest December of record, and that there was more cloudiness, more snow and a greater number of days with measurable precipitation than usual. These adverse conditions were, however, counterbalanced by the fact that the wind movement was extremely light, so there was no drifting of snow or blizzardy conditions. Snow flurries were frequent after the 7th, and the temperature was unusually low during the second and third decades of the month. In some localities the 26th was the coldest December day since December 31, 1863.

All fall sown grains, grass and alfalfa were well protected by a thick mantle of snow during the periods of low temperature. Sleighing was excellent over the greater part of the state after the 18th.

Pressure.—The mean sea level pressure for the state was 30.25 inches. The highest recorded was 30.72 inches, at Keokuk on the 16th, and the lowest was 29.53 inches, at Davenport and Keokuk, on the 29th.

Temperature.—The monthly mean for the state, 109 stations reporting, was 15.7°, or 8.2° below the normal, and with one exception was the coldest December of record. By sections, the mean temperatures were as follows: Northern, 12.7°, or 8.5° below the normal; Central, 16.2°, or 7.9° below the normal; Southern, 18.2°, or 8.2° below the normal. The highest temperature reported in the state was 63° at Bloomfield, on the 1st, and the lowest was —31° at Iowa Falls, on the 26th. The temperature averaged lower, and lower readings were recorded, over the eastern and northeastern counties than over the western and southwestern counties. At Iowa City, the 26th, with a temperature of —22°, was the coldest December day recorded since December 31, 1863, when the temperature was 23° below zero.

Humidity.—The mean relative humidity for the state at 7 a. m. was 87 per cent, and at 7 p. m. it was 83 per cent. The mean for the month was 85 per cent, or 6 per cent more than the normal. The highest monthly mean was 90 per cent at Charles City, and the lowest 82 per cent at Des Moines, Dubuque and Keokuk. The high percentage of humidity at the 7 p. m. observations, as compared with the average for 7 a. m., is remarkable.

Precipitation.—The average for the state, 116 stations reporting, was 1.30 inches, or 0.08 inch more than the normal. By sections the averages were as follows: Northern, 1.09 inches, or 0.02 inch more than the normal; Central, 1.43 inches, or 0.18 inch more than the normal; Southern, 1.38 inches, or 0.03 inch more than the normal. The greatest amount reported from any station was 2.24 inches, at Tipton, and the least, 0.57 inch, at Le Mars. The greatest amount in any 24 consecutive hours, 1.03 inches, occurred at Washington, on the 28th-29th. All of the precipitation after the 7th came in the form of snow, and, while the amounts were not great, the flurries were frequent. The average number of days with 0.01 inch or more of precipitation was 9, which is 4 more than the average for December, and has not been equalled or exceeded in any December of record, except in 1909, when there were 11 days.

Snowfall.—The average for the state was 11.1 inches, or almost twice the normal amount. The greatest monthly amount was 20.2 inches at Waterloo, and the least 5.2 inches at New Hampton.

Wind.—The prevailing direction of the wind was from the northwest. The highest velocity was at the rate of 40 miles an hour from the northwest, at Sioux City, on the 29th.

Sunshine and Cloudiness.—The average percentage of the possible amount of sunshine was 39 per cent, or about 10 per cent less than the normal. The average number of clear days was 10; partly cloudy, 6; cloudy, 15.

MISCELLANEOUS PHENOMENA.—Sleet fell at Belmond and Pella on the 28th and at Clinton on the 29th. At the latter place many telephone wires were down "From heavy, wet snow." Rivers were frozen over between the 10th and 16th and by the end of the month the ice was 8 to 12 inches thick. The ice harvest began on the 28th at many places in the state.

COMPARATIVE DATA FOR THE STATE—DECEMBER.

YEAR	Temperature				Precipitation					Number of Days			
	Mean	Departure	Highest	Lowest	Total	Departure	Greatest	Least	Snowfall	With precipitation .01 in.	Clear	Partly cloudy	Cloudy
1890	29.1	+5.2	72	—18	0.45	—0.77	1.40	0.00	------	3	17	7	7
1891	32.3	+8.4	72	—14	2.41	+1.19	4.50	1.21	------	6	14	9	8
1892	18.9	—5.0	68	—29	1.65	+0.43	3.04	0.20	10.9	8	9	8	14
1893	22.0	—1.9	70	—21	1.31	+0.09	2.80	0.46	7.6	7	10	9	12
1894	30.1	+6.2	73	—17	0.95	—0.27	1.75	0.25	1.3	3	15	6	10
1895	25.4	+1.5	63	—16	1.63	+0.41	5.74	0.00	4.1	5	11	9	11
1896	30.8	+6.9	70	—10	0.65	—0.57	1.79	T	1.6	4	10	8	13
1897	18.0	—5.9	60	—25	1.65	+0.43	3.22	0.61	15.9	6	11	7	13
1898	18.1	—5.8	60	—25	0.48	—0.74	1.70	T	3.9	3	15	8	8
1899	22.6	—1.3	75	—19	1.61	+0.39	4.28	0.10	4.3	5	12	9	10
1900	26.9	+3.0	63	—10	0.45	—0.77	2.70	T	2.4	4	13	6	12
1901	20.5	—3.4	64	—31	0.93	—0.29	2.75	0.05	5.4	6	10	9	12
1902	20.1	—3.8	59	—20	2.23	+1.01	5.51	0.67	12.9	8	9	6	16
1903	19.6	—4.3	58	—27	0.41	—0.81	1.96	T	3.7	4	11	9	11
1904	23.4	—0.5	67	—19	1.44	+0.22	3.68	0.06	12.3	5	12	7	12
1905	27.0	+3.1	62	—11	0.52	—0.70	1.69	T	4.2	3	19	6	6
1906	25.7	+1.8	65	— 9	1.43	+0.21	2.81	0.37	1.4	6	11	7	13
1907	28.8	+4.9	62	— 9	1.00	—0.22	2.28	0.05	4.7	5	10	7	14
1908	27.2	+3.3	67	—17	0.57	—0.65	2.07	0.05	3.8	3	15	8	8
1909	15.1	—8.8	60	—26	2.18	+0.96	6.10	0.89	13.7	11	10	5	16
1910	23.4	—0.5	57	—14	0.37	—0.85	1.39	0.01	3.0	3	15	7	9
1911	27.9	+4.0	60	—24	2.57	+1.35	4.43	0.62	12.6	7	13	6	12
1912	29.2	+5.3	64	—13	0.74	—0.48	1.75	0.10	1.1	3	18	7	6
1913	32.0	+8.1	65	—13	1.02	—0.20	4.73	0.00	1.3	4	15	5	11
1914	15.7	—8.2	63	—31	1.30	+0.80	2.24	0.57	11.1	9	10	6	15
Normals	23.9	-------	65	—19	1.22	--------	3.05	0.25	6.2	5	13	7	11

T indicates an amount too small to measure, or less than .005 inch precipitation and less than .05 inch snowfall.

MONTHLY STATE DATA FOR 1914.

MONTH	Temperature				Precipitation				Number of Days				Prevailing direction of wind
	Mean	Departure from normal	Highest	Lowest	Average	Departure from normal	Greatest	Least	1 in. or more of precip'n	Clear	Partly cloudy	Clopdy	
January	27.8	+9.9	64	—10	0.88	—0.17	2.34	0.27	5	11	8	12	nw
February	16.8	—3.7	59	—29	0.87	—0.28	1.99	0.32	6	10	9	9	nw
March	34.7	+1.4	78	— 5	1.69	—0.08	3.84	0.28	7	12	8	11	nw
April	48.6	—0.1	88	11	2.52	—0.34	5.03	0.37	8	10	8	12	nw
May	62.2	+1.7	98	25	3.31	—1.26	6.90	0.30	10	14	11	6	s
June	72.2	+3.1	101	40	5.57	+1.19	13.24	1.17	13	12	14	4	s
July	76.6	+2.5	109	43	2.27	—1.69	6.50	0.44	5	20	8	3	s
August	73.7	+1.9	103	40	2.19	—1.49	4.90	0.42	7	17	10	4	s
September	64.5	+1.1	99	30	7.88	+4.52	16.24	2.48	10	15	8	7	s
October	55.9	+5.1	88	14	3.23	+0.77	6.64	0.74	9	16	6	9	s
November	41.0	+6.0	80	— 4	0.22	—1.29	0.95	0.00	2	19	6	5	nw
December	15.7	—8.2	63	—31	1.30	+0.08	2.24	0.57	9	10	6	15	nw
Annual	49.1	+1.7	109	—31	31.93	—0.04	16.24	0.00	91	166	102	97	s

COMPARATIVE DATA FOR THE STATE—ANNUAL.

	Temperature					Precipitation in inches			
Year	Mean annual	Highest	Date	Lowest	Date	Annual	Greatest annual	Least annual	Av. snowfall
1890	48.0	110	July 13	—27	January 22	31.30	45.74	16.00	------
1891	47.3	106	August 9	—31	February 4	32.90	49.05	23.48	------
1892	46.6	104	July 11	—38	January 19	36.58	48.77	24.78	34.2
1893	45.7	102	July* 13	—36	January 14	27.59	33.27	19.19	37.2
1894	49.7	109	July 26	—37	January 25	21.94	29.81	15.65	19.2
1895	47.2	104	May 28	—33	February 1	26.77	35.25	18.57	26.0
1896	48.6	104	July 3	—20	January 4	37.23	51.60	28.68	22.6
1897	47.8	106	July* 23	—30	January 25	26.98	36.18	20.21	38.8
1898	47.7	103	August 20	—25	December 31	31.34	55.47	19.51	40.3
1899	47.3	104	September 6	—40	February 11	28.68	42.06	21.79	23.4
1900	49.3	103	August 3	—27	February 15	35.05	47.33	25.05	25.8
1901	49.0	113	July 22	—31	December 15	24.41	37.69	16.35	38.5
1902	47.7	98	July 30	—31	January 27	43.82	58.80	20.14	28.0
1903	47.2	101	August 24	—27	December 13	35.39	50.53	26.41	19.4
1904	46.3	100	July 17	—32	January 27	28.51	38.93	19.34	29.2
1905	47.2	104	August 11	—41	February 2*	36.56	52.26	24.66	38.3
1906	48.4	102	July 21	—32	February 10	31.60	44.34	20.63	32.8
1907	47.4	102	July 5	—31	February 5	31.61	43.90	19.93	24.0
1908	49.5	101	August 3	—18	January 29	35.26	49.98	24.11	22.7
1909	47.4	103	August* 15	—26	February* 15	40.01	53.48	27.20	49.0
1910	48.6	108	July 16	—35	January 7	19.87	27.99	12.11	23.4
1911	49.5	111	July* 3	—35	January 3	31.37	46.77	19.74	35.3
1912	46.4	104	September 8	—47	January 12	28.89	33.13	15.25	39.5
1913	49.7	108	July 16*	—25	January 8	29.95	45.18	20.31	25.4
1914	49.1	109	July 12	—31	December 26	31.93	44.11	23.30	27.5

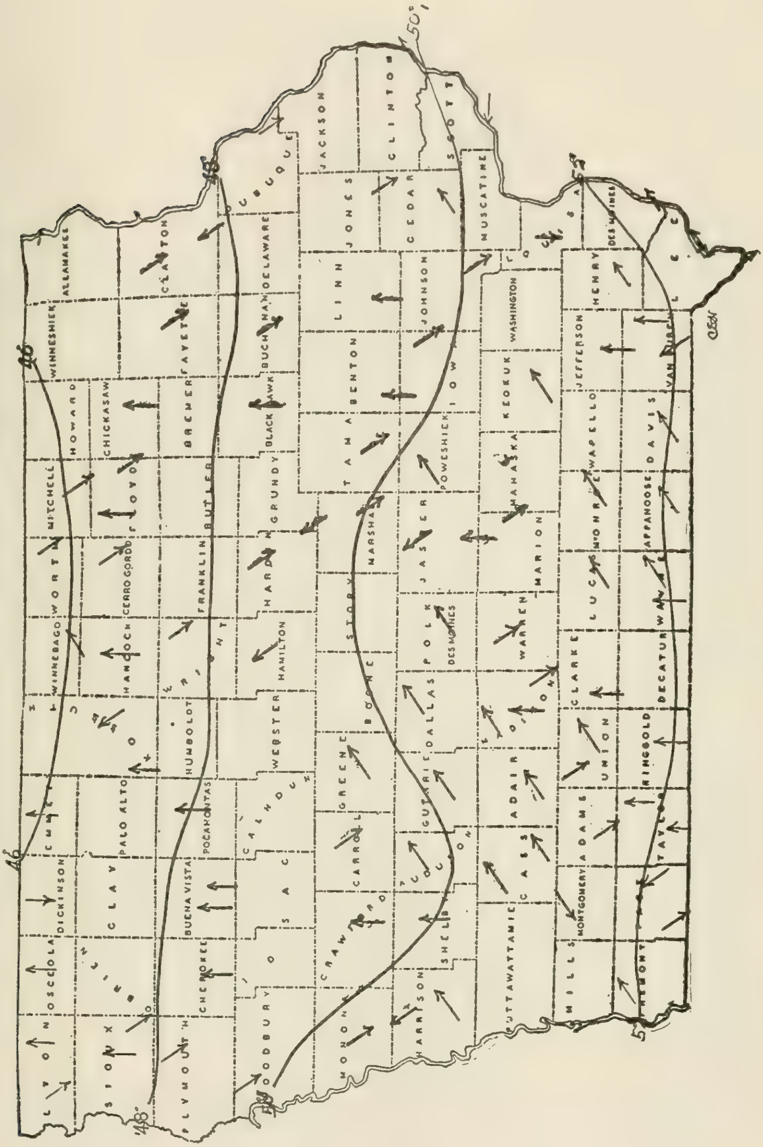
*And other dates.

DATES OF KILLING FROSTS, 1914

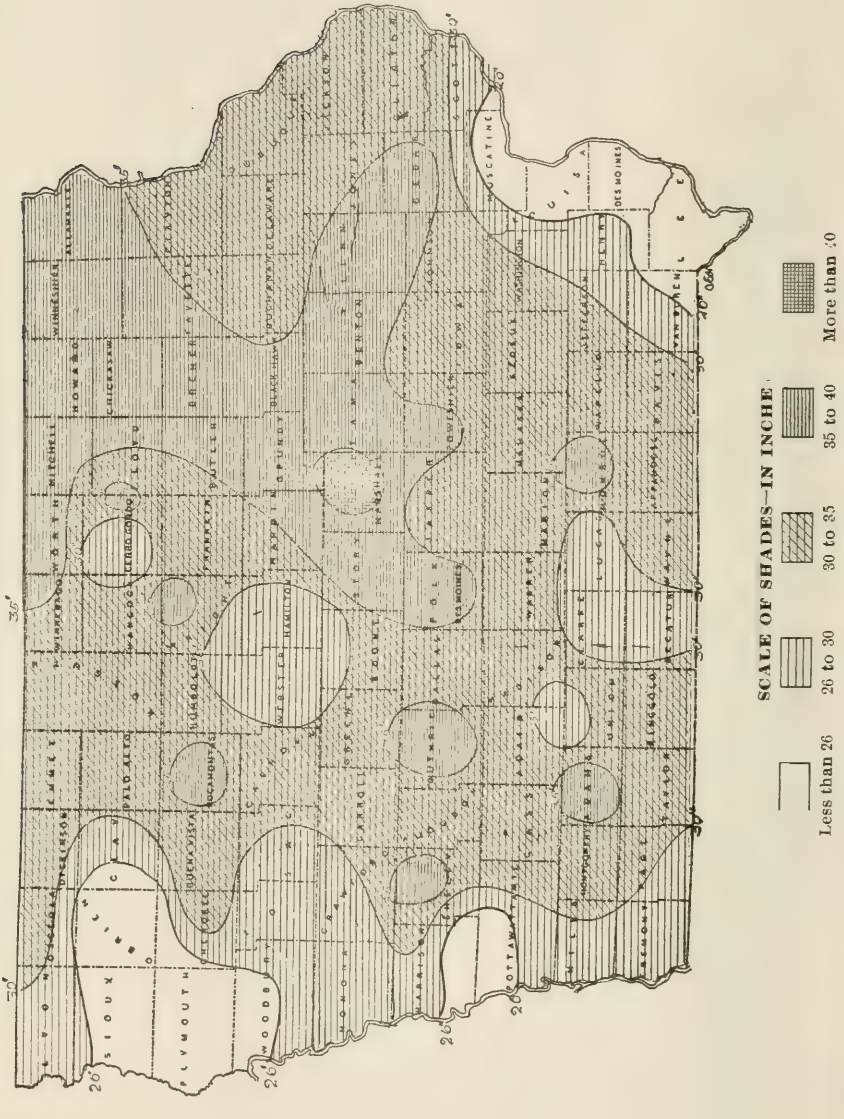
STATIONS	Killing Frosts Last in spring	Killing Frosts First in autumn
Northern Section		
Algona	April 20†	Oct. 25
Allison		Oct. 25
Alta	May 12†	Oct. 25
Alta (near)		Oct. 25
Alton	May 13†	Oct. 25
Belmond	April 20	Oct. 25
Britt	April 20†	Oct. 25
Charles City	April 20	Oct. 25
Decorah	May 16	Oct. 25
Elkader	May 17†	Oct. 25
Elma	May 15†	
Estherville	April 20†	Oct. 25
Fayette	April 20†	Oct. 27
Forest City	April 21†	Oct. 25
Humboldt	May 15	Oct. 25
Inwood	April 20†	Oct. 15
Lake Park	May 13	Oct. 25
Lansing	April 20†	
Le Mars	April 20†	Oct. 25
Mason City	April 20	Oct. 25
New Hampton	April 20†	Oct. 25†
Nora Springs	April 20	Oct. 25
Northwood	April 20†	Oct. 25
Osage	April 20†	Oct. 25
Pocahontas	May 15	Oct. 25
Postville	April 20†	Oct. 25
Rock Rapids	May 13†	Oct. 14†
Sanborn	April 20	Oct. 25
Sibley	May 13†	Oct. 25
Sioux Center	April 20†	Oct. 25
Spencer	May 13†	Oct. 25
Storm Lake	April 20	Oct. 27
Washta	May 13	Oct. 25
Waverly	May 15†	Oct. 25
West Bend	April 20	Oct. 25
Central Section		
Amana	April 20†	Oct. 27
Ames		Oct. 25
Audubon	April 20†	Oct. 25
Baxter	April 20	Oct. 27
Belle Plaine	April 20	Oct. 25
Boone		Oct. 25
Carroll	April 20†	Oct. 27
Cedar Rapids	April 20†	Oct. 25
Clinton	April 20†	Oct. 25
Davenport	April 20†	Oct. 27
Delaware	April 20†	Oct. 27
Denison	May 13	Oct. 25
Des Moines	April 20†	Oct. 25
Dubuque	April 20	Oct. 27
Fort Dodge	April 20†	Oct. 25
Grinnell	April 20†	Oct. 27
Grundy Center	April 20†	Oct. 25
Guthrie Center	April 20†	Oct. 25
Harlan	May 13	Oct. 25
Independence	April 20†	Oct. 25
Iowa City	April 12	Oct. 25
Iowa Falls	April 20†	Oct. 25
Jefferson	April 20†	Oct. 25
Little Sioux	May 14	Oct. 27
Logan	May 13†	Oct. 25
Maquoketa	April 20†	Oct. 25
Marshalltown	April 20†	Oct. 25
Monroe	April 20†	Oct. 25
Odebolt	April 20†	Oct. 25
Olin	April 20†	Oct. 25
Onawa	April 9	Oct. 25
Perry	April 20†	Oct. 25
Sac City	April 20†	Oct. 25
Sioux City	April 20	Oct. 25
Tipton	April 20†	Oct. 27
Toledo	April 20†	Oct. 25
Waterloo	April 20†	Oct. 25
Waukee	April 20	Oct. 25
Webster City	May 13†	Oct. 25†
Whitten	April 20†	Oct. 25
Southern Section		
Afton	April 20†	Oct. 27
Albia	April 20†	Oct. 27
Allerton	April 20†	Oct. 27
Atlantic	April 20†	Oct. 25
Bedford	May 13	Oct. 27
Bloomfield	April 20†	Oct. 27
Bonaparte	April 20†	Oct. 27
Burlington	April 20†	Oct. 27
Centerville	April 20†	Oct. 27
Chariton	April 20†	Oct. 25
Clarinda	April 20†	Oct. 27
Columbus Junction	April 20	Oct. 27
Corning	May 13†	Oct. 27
Corydon	April 20†	Oct. 27
Council Bluffs	May 14†	
Creston	April 20†	Oct. 25
Earlham	April 20†	Oct. 25
Elliott	May 13	Oct. 25†
Fairfield	May 1†	Oct. 27
Fort Madison		Oct. 25
Greenfield	April 20†	Oct. 27
Indianola	April 20	Oct. 25
Keokuk	April 12	Oct. 27
Keosauqua	April 20†	Oct. 27
Knoxville	April 20†	Oct. 27
Lamoni		Oct. 27
Lenox	April 20†	Oct. 27
Leon	April 20	Oct. 27
Mt. Ayr.	April 20†	Oct. 27
Mt. Pleasant	April 20†	Oct. 27
Murray	April 20†	Oct. 25
Northboro	April 20†	Oct. 27
Oskaloosa	April 20	Oct. 27
Ottumwa	April 20†	Oct. 27†
Pella	April 20†	Oct. 27
St. Charles	April 20†	Oct. 27
Sigourney	April 20†	Oct. 25
Stockport	May 1	Oct. 27
Thurman	May 13	Oct. 27
Washington	April 20†	Oct. 27
Winterset	April 20†	Oct. 27
Omaha, Neb.	April 11†	Oct. 27

†Date of last temperature of 32° or lower in spring, first temperature of 32° or lower in autumn, as the case may be, when frost was not reported.

MEAN ANNUAL ISOTHERMS AND PREVAILING WINDS, 1914.


46
48°
50°
52
LYON
OSCEOLA
DICKINSON
EMMET
KOSSUTH
WINNEBAGO
WORTH
MITCHELL
HOWARD
WINNESHIEK
ALLAMAKEE
SIOUX
O'BRIEN
CLAY
PALO ALTO
HANCOCK
CERRO GORDO
FLOYD
CHICKASAW
FAYETTE
CLAYTON
PLYMOUTH
CHEROKEE
BUENA VISTA
POCAHONTAS
HUMBOLDT
WRIGHT
FRANKLIN
BUTLER
BREMER
BLACK HAWK
BUCHANAN
DELAWARE
DUBUQUE
WOODBURY
IDA
SAC
CALHOUN
WEBSTER
HAMILTON
HARDIN
GRUNDY
MONONA
CRAWFORD
CARROLL
GREENE
BOONE
STORY
MARSHALL
TAMA
BENTON
LINN
JONES
JACKSON
CLINTON
CEDAR
SCOTT
HARRISON
SHELBY
AUDUBON
GUTHRIE
DALLAS
POLK
DES MOINES
JASPER
POWESHIEK
IOWA
JOHNSON
MUSCATINE
POTTAWATTAMIE
CASS
ADAIR
MADISON
WARREN
MARION
MAHASKA
KEOKUK
WASHINGTON
LOUISA
MILLS
MONTGOMERY
ADAMS
UNION
CLARKE
LUCAS
MONROE
WAPELLO
JEFFERSON
HENRY
DES MOINES
FREMONT
PAGE
TAYLOR
RINGGOLD
DECATUR
WAYNE
APPANOOSE
DAVIS
VAN BUREN
LEE

TOTAL PRECIPITATION, 1914.


SCALE OF SHADES—IN INCHES
Less than 26
26 to 30
30 to 35
35 to 40
More than 40
26
30
35

CLIMATE AND CROP REVIEW

Season 1914

WEATHER AND CROP REVIEW BY MONTHS.

The year 1914 opened with the warmest January and ended with the second coldest December of record. All of the months of the year, except February, April and December, were warmer than usual, and the summer months, like those of 1913, were unusually warm. In regard to precipitation, the records show that the State received nearly the normal amount, there being a deficiency of only 0.04 inch. This, however, does not indicate the conditions that prevailed during most of the year, and especially during the crop months. There was a deficiency of precipitation every month from January to August, inclusive, except in June, and the southern part of the State suffered from one of the worst droughts of record. At the end of August, there was an accumulated deficiency of precipitation of 4.12 inches. This was overcome by excessive rains in September and the excess was further increased by frequent showers during the first half of October, but dry weather during the latter half of October and all of November caused a slight deficiency for the year. The hot, dry weather during July and August greatly reduced the yield of corn, especially in the southern counties, where the effects of the drought were even worse than in 1913.

SYNOPSIS BY MONTHS.

The generally mild and pleasant weather that prevailed during November and December, 1913, continued most of the time during January, 1914, making it the warmest month of that name since 1880, and the warmest winter season, November to January, inclusive, of record. The average temperature was 10° above the normal, and there were no storms of consequence. A moderate cold wave passed over the State on the 12th; the temperature ranging from a little above zero in the southern part of the State to 5° and 10° below zero in the northern section. The snowfall was lighter than usual and did not remain on the ground long. Live stock was out most of the month, thereby affecting a considerable saving in feed. Building operations suffered little interruption because of unfavorable weather conditions.

February was considerably colder than usual, but the precipitation was less than the normal. There was, however, an excess of wind movement, but there were no general winter storms that should be classed as severe until the night of the last day of the month. As a result, there was much less than the average amount of trouble and inconvenience from drifting snow. In fact, railroads, telephone and telegraph companies and stock feeders probably have never experienced a more favorable winter. There were two cold waves. The first occurred on the 7th-8th, and the second spread over the State on the afternoon and night of the 28th. The first was not severe, although it gave the coldest weather of the month and winter on the 8th. The one on the 28th was attended by winds of gale force and rapidly falling temperature. It proved to be one of the severest blows Iowa has experienced in recent years, and was the only general blizzard of the winter. Ice of good thickness and quality was secured, and the harvest was generally finished by the 20th. Fall sown grains were protected by snow during the coldest weather and were in good condition at the close of the month.

The conditions during March were quite typical. The chief features were the cold wave at the beginning of the month, the warm spring-like weather two weeks later, and the cloudy, snowy period during the closing days. Both the mean temperature and average precipitation were near the normal, while the snowfall was light, averaging less than two inches. A five day period of warm, pleasant weather began on the 12th; the day temperatures at this time were unusually high for so early in the season, reaching 70° even in northern Iowa. Most of the ice in streams and rivers disappeared during this period, vegetation began to grow, and some field work was done. The return of cool weather on the 17th checked the growth of vegetation.

The mean temperature and average precipitation for April were very close to the normals, there being a deficiency of only 0.1° in temperature and 0.34 inch in precipitation. The month was considerably drier than usual until the 24th, but from that date to the 28th, the rainfall was general and, at many stations, heavy. The month, as a whole, was favorable for all out-door pursuits. The bulk of the small grain was sown by the 18th. Potatoes were planted and a large area was prepared for corn. Fruit trees were in blossom in the southern counties, and shade trees were becoming green in all parts of the State.

May was characterized by cool weather during the first and moderately warm weather during the latter half of the month, and by numerous torrential local rains, although there was a deficiency of rainfall for the State, as a whole. Frost was quite general over the northern two-thirds of the State between the 12th and 14th, but no damage was done except to tender garden truck. Destructive wind squalls occurred in many localities on the 3d, and on the night of the 10th-11th. Most of the wind squalls attended severe electrical storms, and were accompanied by excessive rainfall and, in some cases, by hail. The heavy rains caused considerable damage by floods and soil erosion, and the hail was destructive to fruits, garden truck, meadows and greenhouses. A deficiency of moisture in the southern counties was detrimental to all crops except corn.

June was an exceptionally favorable month over the larger part of the State, but there was some objectionable features of local character, such as damaging wind squalls, electrical storms, excessive rainfall, drought and, in a few places, hailstorms. Over the northern and central districts there was an excess of precipitation, amounting to 2.51 and 1.76 inches, respectively; while in the southern counties there was a deficiency of .71 inch. The heavy rains in the northern part of the State delayed the cultivation of corn and flooded the bottom lands, while in the southern districts grass, small grain and early potatoes were suffering from lack of moisture. Corn made remarkably rapid growth, and at the close of the month the bulk of the crop was laid by with fields in excellent condition.

July was notable for heat and dryness. With the exception of July, 1901, it was the warmest month of that name in 25 years. But few severe storms occurred, the most important being those of the 16th and 27th. The former was more widespread, and much damage was done to corn and grain. Corn was in such excellent condition at the close of June that it withstood the drought remarkably well, but considerable deterioration took place in southern counties as the month progressed. Haying and harvesting were practically completed under favorable conditions. Pastures were cut short by the drought, especially in southern counties, and in some places stock had to go on feed.

The hot and dry weather that prevailed during July continued until the 18th of August, culminating on the 16th, 17th and 18th with high temperatures and hot, dry winds. From the 19th to the close of the month the temperature was generally moderate and showers were more frequent. The 16th and 17th were among the worst days ever experienced in Iowa. The temperature was near or above 100 degrees, with wind velocities ranging from 25 to 36 miles per hour, bright sunshine and extremely low humidity. All vegetation, especially over the southern half of the state, suffered greatly by these adverse conditions. While August will go on record as a dry month, and great damage was done by the drought, yet rain fell at some point in the State on every day of the month. The showers were, however, widely scattered and of but slight benefit, except in a few localities of small area, until near the close of the month. Copious and quite general showers occurred on the 23d, 27th and 31st, which afforded great relief to vegetation, and put the ground in condition for plowing. The month closed with severe local wind, rain and electrical storms in many localities. Wind damaged trees and buildings, and wind and rain seriously injured the corn crop.

September was the wettest month of that name in the history of the State, and, with one exception—July, 1902—it was the wettest month of record since state-wide observations began in 1890. Showers were frequent between the 1st and 24th, and in many localities the rainfall was heavy to excessive, the greatest monthly amount being 16.24 inches at Lenox, and the greatest amount in 24 consecutive hours was 7.78 inches at Cedar Rapids. The long, severe drought of July and August was thoroughly broken, and at the close of the month pastures were as green as in May or June. Much fall plowing was done and a large acreage of winter wheat had been seeded.

With the exception of frequent and general showers between the 5th and 14th of October, and light scattered showers on the 22d and 23d, the weather was unusually mild and pleasant and favorable for farm and construction work. The first cool wave of the season spread over the State between the 24th and 27th, causing the first killing frost in all sections, except in the extreme northwestern corner of the State, where killing frost occurred on the 15th. Light snow flurries, the first of the season, occurred in the eastern counties on the 26th. Much of the corn crop was harvested and pastures, meadows and fall sown grains were in excellent condition.

The weather during November was remarkably mild, dry and sunshiny. The general absence of precipitation caused dusty roads in some parts of the State, but the lack of moisture did not materially shorten pasturage for stock, which was out all the month. Corn gathering progressed with but little interruption, and by the close of the month a large percentage of the crop had been cribbed.

December was, with one exception, the coldest month of that name of record. There was more cloudiness, more snow, and a greater number of days with measurable precipitation than usual, but these adverse conditions were counterbalanced by the fact that the wind movement was extremely light. Snow flurries were frequent after the 7th, and the temperature was unusually low during the second and third decades of the month. At Iowa City, the 26th was the coldest December day since December 31, 1863. Grains and grasses were well protected by a thick mantle of snow during the coldest weather. Rivers were frozen over between the 10th and 16th and by the end of the month ice was 8 to 12 inches thick. The ice harvest began on the 28th at many places in the state.

CLIMATE AND CROP BULLETINS.

Summaries of Weekly Bulletins Issued in the Season of 1914.

Bulletin No. 1. For the week ending April 12, 1914.—The winter of 1913-14 was the warmest winter of record and was, with four exceptions, the driest winter since 1890. The average temperature for the five months, November to March, inclusive, was only 0.4 degree below the freezing point, and there was less snowfall than for any winter since state-wide observations began. March was warmer and drier than usual, but owing to wet, inclement weather during the last decade of the month and unusually cold weather during the first eleven days of April farm work has been delayed and fruit buds are still dormant. Freezing temperatures were general on four or five mornings of the past week, and as a result but little field work could be done. While the sub-soil is dry, the recent rains and snows have been sufficient to thoroughly moisten the surface and the ground is in excellent condition for plowing and seeding as soon as warmer weather prevails. Fall sown grains and clovers suffered but little damage from winter killing, due to the fact that although the winter was mild the temperature was uniformly moderately cool. There are, however, some fields in the extreme southern counties that appear to be spotted, and the Hessian fly is reported to have caused 8 to 10 per cent damage to the crop in Scott county, but the condition for the state as a whole is at least 5 per cent better than it was on April 1, 1913, and the acreage is considerably greater than it was last year. Owing to the continued cold weather the seeding of oats has but fairly begun. The bulk of the spring wheat seeding is finished, and the acreage will be somewhat greater than last year. But little has been done in the way of gardening and only a few potatoes have been planted. Grass appears to be in good condition, but has barely started to grow. All live stock came through the winter in a thrifty condition and there is sufficient feed and roughage left to last until new pasturage is obtainable. The spring pig crop is fairly good considering the great loss of breeding stock last season from cholera. The week closes with clear weather and much higher temperature, and if these conditions continue, all farm operations will be rushed during the coming week. Up to the present time the prospects are favorable for a bountiful crop year.

Bulletin No. 2. For the week ending April 19, 1914.—The past week was, until Saturday, unusually warm, and all conditions, except brisk to high winds on Friday, were favorable for farm work and the growth of vegetation. The average daily temperature was six degrees above the normal, and on Thursday and Friday the maximum temperature readings were considerably above 80 degrees in nearly all parts of the state. There was practically no rainfall until Saturday morning, and the amount of sunshine was excessive. Under these conditions farm work progressed rapidly, and the bulk of the small grain was seeded, a large proportion of the early potato crop was planted and much ground was plowed for corn. The warm weather hastened the growth of vegetation, and pasturage will soon be sufficient for the support of stock. Fruit buds are swelling, and leaves are appearing on early shrubs and some varieties of trees. Winter wheat is reported to be in good condition except in a few southern and southwestern counties where some fields are spotted. Showers and rapidly falling temperature occurred on Saturday, with general rain or snow on Saturday night, and the week closes with indications of frost and temperatures near or below the freezing point Sunday night.

Bulletin No. 3. For the week ending April 26, 1914.—Another full week of comparatively dry and warm weather has enabled farmers to do more than the average amount of field work. Spring seeding is finished, early potatoes and garden truck planted and much ground is ready for corn. Owing to a great amount of fall plowing and the favorable conditions prevailing this spring, farm work is farther advanced than usual at this season of the year. Spring grains and grass have started nicely, and oats show a good stand. Winter wheat and rye are generally in good condition, but a good, soaking rain is needed soon to keep up normal growth and produce an average crop of hay. The heavy frost and freezing temperatures on the morning of the 20th did but little if any damage, and the prospects for a fruit crop are still excellent. All fruit trees are in blossom in the southern counties, and shade and forest trees are becoming green in all parts of the state. Some corn has been planted, and if favorable weather continues much of it will be planted during the coming week.

Bulletin No. 4. For the week ending May 3, 1914.—The week as a whole was cold and cloudy. The average temperature was slightly above the normal in the eastern and central and slightly below the normal in the western districts. No frost occurred except in the extreme northwestern counties, where the vegetation was not far enough advanced to be injured. Copious to heavy showers occurred in all sections, but the rainfall was generally less than the normal in the east central and was heavy and, in some localities, excessive in the western counties; the greatest amounts being reported from the southwestern district. The wet weather delayed plowing, and the cold nights retarded corn planting. The rain, however, was of great value to grasses and small grains. Cherry, plum and peach trees are in full bloom in the central and southern counties, but many apple trees are not showing the usual amount of blossoms, probably owing to the drought of last summer and the heavy crop produced last year. A heavy and damaging hailstorm occurred in the eastern part of Polk county on the afternoon of May 3d.

Bulletin No. 5. For the week ending May 10, 1914.—The average temperature was slightly above the normal in the extreme eastern districts and below in the central and western. Light frost occurred on low places in many localities on two or three nights, but no damage was done except to check the growth of vegetation and the germination of corn. Local and generally light showers occurred in nearly all parts of the state on one or more days, but the rainfall was not heavy enough to interfere with field work. Plowing, and in some sections, corn planting progressed rapidly. In a few localities more than half of the corn has been planted, and if favorable weather continues the bulk of the crop will be in by the close of the coming week. Grass and small grains are in good condition. Winter wheat is jointing and rye is heading in the extreme southeastern counties.

The following report by the secretary of the Iowa State Horticultural Society shows the average condition of fruit on May 1st: Apples, 58 per cent; pears, 78; American plums, 88; European plums, 76; cherries, 90; peaches, 69; grapes, 90; red raspberries, 74; black raspberries, 75; blackberries, 82; currants, 87; gooseberries, 83; strawberries, 78 per cent of perfect condition. The average condition of all fruits is 78 per cent, or 7½ per cent less than in April.

Bulletin No. 6. For the week ending May 17, 1914.—Unseasonably cool weather prevailed during most of the past week. Frost occurred in nearly all parts of the state and freezing temperatures are reported from the western counties, but no damage was done except to tender garden truck. Excessive rains, accompanied in some localities by hail and high winds, occurred in the central and north central counties on Sunday night and Monday morning. In the areas of heaviest rainfall field work was delayed for one or two days, and considerable damage was done by rain, hail and wind. But for the state as a whole the conditions were favorable for field work, and at the close of the week fully four-fifths of the corn area has been planted. In the southern districts much of the early planted corn is up, shows a good stand, and is being cultivated. The soil is generally in good condition, but rain is needed in the south central, southwestern and northwestern counties. The prospects for small grain and fruit are still promising.

Bulletin No. 7. For the week ending May 24, 1914.—The past week was warmer than usual, with a slight deficiency of sunshine. The daily excess of temperature ranged from one to four degrees. The rainfall was, up to the time most of the reports were mailed, considerably less than the normal, but the few telegraphic reports received Sunday indicate that copious to heavy showers were quite general Saturday night. The conditions were favorable for field work. The bulk of the corn has been planted, and the late planted is germinating quickly under the effects of warmer weather. The stand is good, but cut and wire worms are doing considerable damage in southern counties. The area planted appears to be fully up to and may prove to be in excess of last year's acreage. Small grain is generally in good condition, but was beginning to show the effect of lack of moisture in many localities, especially in southern districts. A few reports indicate that the Hessian fly is still active in winter wheat, and that some fields have been plowed up on account of the damage done by the fly. Hay, grass and potatoes are doing well, but need more rain. In some sections hay has a tendency to head short, due to lack of moisture. Tree fruits, except apples, give promise of good yields.

Bulletin No. 8. For the week ending May 31, 1914.—Warm, growing weather prevailed during the past week. The average temperature was about 9 degrees above the normal, and the daily maximum temperatures were near or above 90 degrees on several days. The rainfall was considerably less than the normal, but showers occurred in nearly all parts of the state on Thursday or Friday, being copious in the southeastern counties. The heavy showers, referred to in the last bulletin as having occurred on the night of the 23d, were quite general over the northern half of the state. Rain is badly needed in the southern districts, yet up to the present time corn is making rapid growth and is in good condition. Much of it has been cultivated once and some of it twice. Small grain and grass show the effect of drougth to some extent, and winter wheat is seriously damaged in Fremont and Page counties by Hessian fly. Many fields have been plowed up and planted to corn. Over the northern half of the state all crops are in extra fine condition. Fruits, except apples, are still promising, but berries must have rain soon.

Bulletin No. 9. For the week ending June 7, 1914.—The week was hot, and up to Thursday night, very dry. The average temperature was about six degrees above the normal and the daily readings were the highest recorded this season. Showers were frequent over the larger part of the state during the last three days and the rainfall was excessive in some localities, especially in the east central, and northwestern counties. Following are some of the greatest amounts reported: Wright county, 6.61 inches; Marshall, 5.13; Osceola, 4.97; Dickinson, 4.17; Linn, 4.63; Black Hawk, 4.53, and Scott, 4.38 inches. The rainfall was practically nil over the south central counties, and within this area all crops, except corn, suffered from lack of moisture, and stock water is getting scarce. Over the balance of the state, all crops are in fine condition and were greatly improved by the timely rains. The week, as a whole, was exceptionally favorable for farm work and the growth of vegetation, but considerable damage was done in the area of heaviest rainfall by floods and soil erosion. Some damage also resulted from wind squalls, hail and lightning. Probably the most destructive storm of the week occurred in the northern part of O'Brien county on Friday night. Considerable alfalfa was put up during the week in the best of condition and some clover will be cut during the coming week.

Bulletin No. 10. For the week ending June 14, 1914.—The conditions during the past week were unusually favorable for the growth of vegetation. The average temperature was about 8 degrees above the normal, and all parts of the state received copious to heavy rains. Most too much rain has fallen in the northern and western districts, and as a result field work has been delayed and small grain is getting too rank. However, in the south central and southeastern districts, where droughty conditions have prevailed during the past month, the rains will be of great help to all crops except hay, which will be light. Corn has made phenomenal growth and, in some localities, will average knee high. Oats are heading in all sections, and in the southern counties are filling well, although the straw will be short. In the northern and western counties some oats were lodged even before they began heading. Much clover and alfalfa hay was put up during the week.

Bulletin No. 11. For the week ending June 21, 1914.—With the exception of light and widely scattered showers on Thursday, Friday and Saturday night, the week was dry, and until Saturday, cool. The conditions were, however, unusually favorable for field work and the growth of crops. The average temperature was about five degrees below the normal, and two nights were quite cool. Corn has continued to make rapid growth and most fields are clean. Much of it, in southern counties, has been laid by, and in many fields, in all parts of the state, it is knee high. The cooler weather has been beneficial to small grain and grass. Winter wheat and rye harvest has begun in southern districts and will be in full progress during the coming week. There has been some damage by drougth and in some localities by Hessian fly, but there has been but little rust. Oats are filling well, but the straw is short. In the northern part of the state all small grain is rank. The recent rains were also beneficial to fruits, but more moisture is needed in southern counties. Potatoes are promising and garden truck is generally in good condition.

Bulletin No. 12. For the week ending June 28, 1914.—High temperature prevailed until Saturday, and over the northern two-thirds of the state showers were frequent, and in some localities heavy to excessive. The rainfall, however, was not well distributed. While there was little or no rain over the southern two tiers of counties, west of Monroe and Appanoose, the next two tiers of counties received heavy to excessive showers. Over the northern half of the state the rainfall was about normal, although heavy showers occurred in some localities. In many sections the showers were accompanied by high winds, and in a few instances by hail, which did considerable damage to small grain. Probably half of the corn has been laid by in southern districts, and in northern counties some of it is getting too large to cultivate. The crop probably was never in better condition or further advanced at the end of June than it is now. Much winter wheat, rye and some early oats are in shock in the southern part of the state. Most reports indicate that although the straw is short the yield will be good but not up to last year's crop. In northern sections all small grain is in head and filling well, but dry weather is needed to prevent further damage by lodging and the possibility of rust. Haying is well advanced in southern and will become general in central and northern districts during the coming week. Pastures, potatoes and garden truck are generally in excellent condition, except in southwestern counties where dry weather continues. In the fruit district of western Iowa the prospects are satisfactory. Apples promise good size if the weather continues favorable. Both apples and grapes are further advanced than normal, and the grape crop, especially in Pottawattamie county will be large.

Bulletin No. 13. For the week ending July 5, 1914.—Ideal weather prevailed during the last seven days for haying and harvesting fall wheat, rye and early oats, and the time was well improved. The average temperature was about four degrees below the normal and only a few light, scattered showers occurred. Practically all of the winter wheat, rye and early oats are in shock in the southern counties, and the work is well advanced in the central districts. Haying was general and the crop is being put up in fine condition. The yield is, however, considerably below the normal in southern districts but is fair to good over the central and northern counties. The bulk of the corn has been laid by in good condition, and the crop, as a whole, is a week to ten days in advance of the average for this time of the year. Much of it is showing tassels in the southern part of the state but will soon need rain in those sections. Threshing has begun in the south and will begin in central districts during the coming week. Early reports indicate good yields of winter wheat, but not up to those of last year. Early potatoes are generally small and have only a few in a hill. Pastures are in fine condition, except in the southern counties, where rain is badly needed for all growing crops and to replenish the water supply, which is getting short.

Bulletin No. 14. For the week ending July 12, 1914.—This has been the hottest and one of the driest weeks of the season. The average temperature was about 6 degrees above the normal, and the daily maximum temperatures ranged from 90 to 104 degrees. The rainfall was decidedly deficient except in a few localities, of small area, where heavy local showers occurred. The excessive heat and dry weather are beginning to show injurious effects on corn in the southern counties, but the crop as a whole is making rapid growth and is still in good condition. The early planted fields, in all parts of the state, are tasseling and are approaching that stage of growth when rain will be needed soon. Favorable conditions have prevailed for haying, harvesting and threshing. Considerable rust is reported in late oats and smut is appearing in many localities where the seed was not treated. The rust, however, is the red variety and came too late to do serious harm. In some sections more or less rust is reported in all small grain. The early potato crop is nearly a failure.

A summary of the reports on apples for July 1st shows the following percentages of the 1913 crop in the several districts: Northeastern, 23; north central, 41; northwestern, 27; west central, 51; central, 44; east central, 29; southeastern, 36; south central, 58; southwestern, 53 per cent. The average of all reports received shows an estimated production of 40 per cent. Estimating from the assessors' reports for 1913, Iowa will harvest this year a million-bushel apple crop. The fruit is far in advance of the normal for this time of the year and with normal rainfall should reach good size by harvest time. The coddling moth is very bad in unsprayed orchards and the curculio is reported as having done considerable damage in parts of the state. The plum crop will be about 62 per cent and grapes above 90 per cent of the 1913 crop.

Bulletin No. 15. For the week ending July 19, 1914.—Hot weather prevailed until Thursday evening, when quite general showers preceded a cool wave. Heavy showers also occurred in many localities on the night of the 12th, the heaviest rain, both on the 12th and 16th, being reported from the eastern part of the south central and southeastern counties, where the moisture was badly needed. In many localities the showers were accompanied by high winds and electrical storms, and in some sections by hail. Much damage was done to corn and grain. Corn was blown down and uncut grain was badly lodged. The storms were, however, of a local character, and the beneficial effects of the rain will far exceed the amount of damage done by wind and hail. Corn over the greater part of the state is still in good condition and earing well, but more rain would be beneficial. Harvesting is about completed in the southern counties and is well advanced in northern districts. Threshing is progressing rapidly and reports indicate fair to good yields of all grains. Rain is needed for pastures, potatoes, blackberries and apples, and would benefit corn.

Bulletin No. 16. For the week ending July 26, 1914.—High temperatures, bright sunshine and generally dry weather prevailed during the last seven days. The average temperature was about five degrees above the normal, and the daily maximum readings were above 100 degrees on two or three days, in the southern districts. Showers occurred in nearly all parts of the state, but the amounts of rainfall were light, except in a few localities of small area. The drougth has been injurious to pastures, potatoes and spring seeded clover and timothy, and has damaged corn to some extent in the southern counties, but even there it is not beyond redemption for an average yield. As a whole the crop is still in good condition, but would be benefited by rain, and the late planted fields must have rain soon to insure good earing. The small grain harvest is practically completed and threshing is well advanced in central and nearing completion in many localities in southern districts. The yield of grain is variable, ranging from fair to good. Wheat ranges from twenty to thirty bushels per acre; barley sixteen to twenty-five, and oats from twenty to forty-five bushels. A reliable estimate of the average yields cannot now be given on account of the limited number of reports received. The storm of the 15th blew off many apples in Page and Fremont counties. Water for stock is very scarce in southern districts.

Bulletin No. 17. For the week ending August 2, 1914.—Quite general showers occurred on Thursday and Thursday night, but the amount of rainfall was unevenly distributed. In some localities the rainfall was nil, while in others the amounts were light to heavy; the southern counties received the least. In some localities, in the northern counties there was sufficient rainfall to insure the early corn, but for the state as a whole, and especially in the southern districts, corn, potatoes and pastures are needing rain badly. Corn has already suffered considerable damage in the southern part of the state, but the average condition of the whole crop is only four points below the July 1st estimate, or 97 per cent. Much trouble is being experienced in southern districts in obtaining water for stock and for threshing. Small streams and many wells are dry. Threshing is progressing rapidly under favorable conditions. Preliminary estimates show the average yield of winter wheat to be about twenty-three bushels per acre; spring wheat, sixteen; oats, thirty-four; barley, twenty-seven and rye, nineteen bushels per acre. If these estimates are maintained by final returns the state will produce about 175,000,000 bushels of oats; 16,500,000 of wheat; 11,000,000 of barley, and 1,300,000 bushels of rye.

Bulletin No. 18. For the week ending August 9, 1914.—The week was hot and generally dry; the average daily excess of temperature being about three degrees, and the rainfall was much below the normal. There were, however, many local but generally light showers, which afforded slight relief from the severe drought and intense heat. Corn in the northern part of the state is holding its own remarkably well and gives promise of a large yield and early maturity. In some fields corn is beginning to dent. In the southern counties corn is steadily retrograding and the crop is being cut two to four million bushels a week. The scarcity of water is becoming serious. The drought is also severe on pastures, potatoes, gardens and fruit, and is preventing any fall plowing being done. Threshing continues under favorable conditions and is well advanced.

Following is a summary showing average condition of crops on August 1st, as compared with the average of past years on that date, except fruit, which is compared with last year's crop as shown by reports of township assessors: Corn, 97 per cent; pastures, 84; potatoes, 80; flax, 91; apples, 25; plums, 52; grapes, 87 per cent.

Bulletin No. 19. For the week ending August 16, 1914.—The average temperature for the week was about normal, the days being bright and hot and the nights cool. Light to copious showers occurred in a few localities, but over the larger part of the State the rainfall was practically nil or the amounts were too small to be of any material benefit. The greatest measurements of rainfall were reported from the west central, northwestern, north central and eastern counties and the least from the central and southern sections. Corn is steadily retrograding, and much of it in the southern districts is past the stage where rain would be of any benefit. Corn on sandy soil is firing badly in all parts of the state, and the prospective crop has been reduced eight to ten million bushels during the week, yet in many localities over the northern half of the state the crop is in excellent condition, and there has been sufficient rainfall to assure its maturity. In some of the southern counties, corn is being cut to save the fodder. Pastures are brown and afford but little or no feed. Spring seeded grasses are burned out, and late potatoes are suffering badly. Shallow wells and small streams are dry, and the lack of water for stock is serious. Threshing is progressing rapidly and is completed in many localities. But little fall plowing has been done.

Bulletin No. 20. For the week ending August 23, 1914.—The high temperatures and hot winds that prevailed at the close of last week continued during the first two days of this week. The remainder of the week was slightly cooler, with more or less cloudiness and local showers on two or three days in a few localities. The week was, however, hot and generally dry, the average temperature being about 9 degrees above the normal. The rainfall was nil or light except over the east central district and in portions of Madison, Union, Adams and Decatur counties, where the amounts exceeded an inch. The hot winds were very damaging to corn, and on high and sandy land the crop is badly fired. However, with normal weather during the next three weeks the northern half of the state will produce more per acre than the state average of past years. In the southern counties the crop will be much below the average, yet in some localities, where timely showers occurred, the yield will exceed thirty bushels per acre. The dry, hot weather was also damaging to potatoes, pastures, apples and garden truck.

Bulletin No. 21. For the week ending August 30, 1914.—The weather conditions were much more favorable during the past week than they were during the preceding three weeks. The temperature was below normal, and the nights were cool, which, together with a few showers, checked the rapid dessication of corn. The average temperature was about four degrees below the normal, and while the rainfall was light over the central and northeastern counties it was copious to heavy over the southern and northwestern counties, where the amounts were considerably more than an inch in many localities. The rain, however, came too late to be of material benefit to corn or late potatoes in the southern half of the state, but it will help pastures and fall plowing. Practically all the corn in the southern districts is dry and beyond further injury by either drought or frost. Much of it has been cut, and many silos have been filled. The yield, although greatly reduced by the drought and hot winds, will be about up to the average of last year in those districts. In the northern counties corn is generally in good condition, and a heavy yield is promised, although on high or sandy land the crop has been injured by the dry, hot weather. More rain is needed for pastures, late potatoes, fall plowing and to replenish the water supply.

Bulletin No. 22. For the week ending September 6, 1914.—More rain fell in the state during the last seven days than in any other week of the season. The rainfall was heavy except over the northwestern quarter of the state; the amounts, in many localities, in the eastern and southern districts exceeded three inches, and a few stations report more than five inches. In many localities the rains were accompanied by destructive wind squalls and hailstorms, which did much damage to corn. The average temperature was nearly normal, although several nights were quite cool. Light frost occurred in exposed places over the northwestern counties, but no damage was done. The rains were of great benefit to pastures, aftermath, late potatoes, plowing and to some of the late corn. Plowing is now progressing rapidly, and a large area is being prepared in the southern districts for fall wheat and rye. Corn is maturing rapidly and fully three-fourths of it will be beyond danger of frost by the end of the coming week. More than 90 per cent of it will be safe by the 20th and practically all of it by the end of the month. The average condition of corn on September 1st was placed at 87 per cent, or a loss of 10 per cent during August. The condition of late potatoes was 68 per cent and pastures 70 per cent. With favorable weather in the future corn husking will begin earlier than usual.

Bulletin No. 23. For the week ending September 13, 1914.—Cool, cloudy and wet weather prevailed during the week. The average temperature was about 5 degrees below the normal, and the rainfall was copious to excessive. Pastures have revived and are now in good condition, and fall plowing and seeding of winter wheat and rye is progressing rapidly. Late potatoes and some late corn will be benefited by the rains, but the bulk of the corn is dry and beyond danger of injury by frost.

Based on present conditions and an area of 9,324,000 acres, the state will produce about 320,000,000 bushels of corn.

A summary of reports received September 1st, with 86 per cent of the threshing completed, shows the average yield of small grains to be as follows: Oats, 33 bushels per acre; winter wheat, 22; spring wheat, 15; barley, 26; rye, 19, and timothy seed, 4.2 bushels per acre. If these estimates are maintained by final returns, the state will produce about 165,000,000 bushels of oats, 11,000,000 of winter wheat, 4,000,000 of spring wheat, 11,000,000 of barley and 1,300,000 bushels of rye.

IOWA CROP REPORT, JUNE 1, 1914.

Following is a summary showing conditions of crops on June 1st, as compared with the average of past years on that date: Corn, 101 per cent; oats, 99; spring wheat, 98; winter wheat, 96; barley, 95; rye, 97; flax, 96; potatoes, 99; tame hay, 92; wild hay, 95; pastures, 97; alfalfa, 101; apples, 56; plums, 75; peaches (southern Iowa), 84; grapes, 92; strawberries, 90; raspberries, 89; blackberries, 91; and cherries, 87 per cent.

The condition of live stock is as follows: Cattle, 101 per cent; sheep, 100; hogs, 95; spring pigs, 88; horses, 99; foals, 94.

Last year on June 1st the conditions were as follows: Corn, 80; oats, barley and rye, 95; spring wheat, 94; winter wheat, 96; flax, 90; potatoes, 87; tame hay and alfalfa, 102; wild hay, 100; pastures, 103.

IOWA CROP REPORT, JULY 1, 1914.

Acreage of Farm Crops and Estimated Condition of Staple Crops and Fruit.

Reports received July 1st, from county and township correspondents of the Iowa Weather and Crop Service, show the following results as to the acreage and average condition of staple farm crops, and the condition of fruit.

Corn.—As compared with the area reported by the township assessors for 1913, we have an increase of 142,000 acres, or a total of 9,324,300 acres this year. The average condition on July 1st was 102 per cent, or 9 per cent better than on July 1, 1913.

Oats.—Area sown, 5,154,200 acres, or about 50,000 acres less than the acreage of 1913. The average condition is 94, as compared with 91 per cent on the same date last year.

Wheat.—The area of winter wheat is 538,400 acres, or about 12,000 acres more than in 1913. Spring wheat, 261,000 acres, making a total wheat acreage of 799,400. The estimated condition of spring wheat is 96 and of winter wheat 95 per cent, as compared with 92 and 97 per cent last year.

Barley.—Acreage sown, 437,400 acres; decrease 24,000 acres; condition, 90 per cent.

RYE.—Acreage, 73,150; condition, 97 per cent.

FLAX.—Acreage, 14,400; condition, 98 per cent.

HAY.—Acreage of tame and wild hay, 3,571,320; condition, 88 per cent.

ALFALFA.—Acreage, 100,300; increase, 11,700 acres.

PASTURES.—Acreage, 9,375,300; condition, 95 per cent.

FRUITS.—Condition, apples, 40 per cent; grapes, 90 per cent; plums, 69 per cent.

IOWA CROP REPORT, AUGUST 1, 1914.

Following is a summary of reports from crop correspondents on August 1st, showing the average condition of staple crops as compared with the average condition of past years on that date, and the condition of fruit as compared with last year:

Corn, 97 per cent; pastures, 84; potatoes, 80; flax, 91. Preliminary estimates show the average yield of winter wheat to be about 23 bushels per acre; spring wheat, 16; oats, 34; barley, 27; and rye, 19 bushels per acre. If these estimates are maintained by final returns, the State will produce about 175,000,000 bushels of oats; 16,500,000 of wheat; 11,000,000 of barley, and 1,300,000 bushels of rye.

A summary of the reports from special fruit crop reporters gives the estimated production as follows, based in percentages upon the apples produced in 1913:

APPLES.—Northwest Iowa, 28 per cent; north central Iowa, 27; northeast Iowa, 13; west central Iowa, 31; central Iowa, 24; east central Iowa, 21; southwest Iowa, 36; south central Iowa, 28; southeast Iowa, 29 per cent. Average for the state as a whole, 71 counties reporting, is 25.4 per cent. The reports of the assessors show that Iowa harvested a little over 2,000,000 bushels of apples last year. Based on these figures, the State will harvest from three-fourths of a million to one million bushels of apples this year.

IOWA CROP REPORT, SEPTEMBER 1, 1914.

The following is a summary of reports from correspondents on September 1st. The estimated condition of corn as compared with the average of past years on that date was placed at 87 per cent, which is ten points below the August 1st estimate. As in 1913 the crop in the northern counties is generally in fine condition, and will average above the normal. The decrease in condition is due to the drougth and hot winds over the southern half of the state, yet there are many localities within that area where the corn is better than it was a year ago, due to timely local showers. The crop is farther advanced toward maturity than usual, and practically all of it will be out of danger of injury by frost by the end of September.

Potatoes.—The drougth was also damaging to potatoes; the average condition on September 1st being 68 per cent, but this is 21 points better than on September 1, 1913.

Pastures, like corn and potatoes, were in poor condition in the southern counties, but were generally good in the northern counties. The average for the state was placed at 70 per cent.

Eighty-six per cent of the threshing was done. The average yield of winter wheat is 22 bushels per acre; spring wheat, 15; oats, 33; barley, 26; rye, 19; timothy seed, 4.2 bushels per acre.

Apples.—Sixty-two counties reporting show that there will be harvested this year 22 per cent as many apples as last year. This would indicate that there will be harvested about one-half million bushels of apples. Of this quantity the reports show 64 per cent for the state as a whole will be marketable. Estimating by districts there will be slightly more than one-third of a million bushels that will be marketable. This relatively high percentage is due to the fact that only well cared for sprayed orchards are producing this year. The average for the state August 1st was 25.4 per cent. The crop estimate has dropped 3.4 per cent during August.

FINAL REPORT FOR THE STATE—TOTAL YIELD OF SOIL PRODUCTS—VALUE AT FARM PRICE, DECEMBER 1, 1914.

Following is a summary of reports from crop correspondents of the Iowa Weather and Crop Service, showing the average yield per acre and total yields of staple soil products, and the average price at the nearest station, December 1, 1914:

Corn.—As in 1913, drought reduced the yield in the southern counties, but timely and copious showers over the northern districts more than made up the loss, and the State produced 21,000,000 bushels more than it did last year. The average yield per acre was 39 bushels, and the total yield 363,689,600 bushels. The average price at the nearest station was 55 cents, making the total value of the crop $200,029,280. The weather during the latter half of October and all of November was ideal for harvesting, and the quality of the crop was never better.

Oats.—The area harvested was 5,154,200 acres; average yield, 34 bushels per acre; total yield, 172,696,000 bushels; aggregate value at 34 cents per bushel, $70,805,360. Last year the average yield was 34.2 bushels per acre; total yield, 164,851,000; aggregate value at 34 cents per bushel, $56,049,340.

Spring Wheat.—Area harvested, 261,025 acres; average yield, 13 bushels per acre; total yield, 3,389,070 bushels; price per bushel, 94 cents; total value, $3,185,725.

Winter Wheat.—Area harvested, 538,410 acres; average yield per acre, 22 bushels; total yield, 11,670,710 bushels; average price, 97 cents per bushel; total value, $11,320,588. The total yield of all wheat is 15,059,780 bushels, as compared with 16,348,807 bushels last year; but the value of this year's crop exceeds that of 1913 by $2,284,748.

BARLEY.—Average per acre, 26 bushels; total yield, 11,423,310 bushels; average price, 56 cents; total value, $5,397,053.

RYE.—Average yield, 19 bushels per acre; total crop, 1,369,260 bushels; farm price, 77 cents; total value, $1,054,320.

FLAX SEED.—Average per acre, 11 bushels; total product, 152,280 bushels; total value, at $1.21 per bushel, $184,258.

POTATOES.—Average yield per acre, 87 bushels; total yield, 9,540,200 bushels; total value at 87 cents per bushel, $5,533,316.

HAY (TAME).—Average yield, 1.4 tons; total yield, 4,234,370 tons; average price, $10.78; total value, $45,646,508.

HAY (WILD).—Average yield, 1.3 tons; total yield, 860,280 tons; average price, $8.26 per ton; total value, $7,123,118.

ALFALFA.—Area, 88,070 acres; average yield, 3.6 tons per acre; total yield, 319,853 tons; average price, $12.50 per ton; total value, $3,998,162.

TABULATED CROP SUMMARY.

	Acreage	Average Yield per Acre	Average price	Total Yield	Total Value
Corn	9,324,300	39.0 bu.	$ 0.55	363,689,600 bu.	$ 200,029,280
Oats	5,154,200	34.0 bu.	.41	172,696,000 bu.	70,805,360
Spring wheat	261,025	13.0 bu.	.94	3,389,070 bu.	3,185,725
Winter wheat	538,410	22.0 bu.	.97	11,670,710 bu.	11,320,588
Barley	437,400	26.0 bu.	.56	11,423,310 bu.	5,397,053
Rye	73,150	19.0 bu.	.77	1,369,260 bu.	1,054,320
Flax seed	14,440	11.0 bu.	1.21	152,280 bu.	184,258
Potatoes	110,205	87.0 bu.	.58	9,540,200 bu.	5,533,316
Hay (tame)	2,923,250	1.4 tons	10.78	4,234,370 tons	45,646,508
Hay (wild)	684,070	1.3 tons	8.28	860,280 tons	7,123,118
Alfalfa	88,070	3.6 tons	12.50	319,853 tons	3,998,162
Pastures and grazing				Estimated	84,000,000
Ensilage				Estimated	3,750,000
Timothy seed				Estimated	2,600,000
Clover seed				Estimated	500,000
Sweet corn				Estimated	525,000
Pop corn				Estimated	500,000
Fruit crop				Estimated	5,000,000
Garden truck				Estimated	5,000,000
Miscellaneous crops				Estimated	9,000,000
Total value					$ 465,152,688

The value of soil products for 1913 was $ 438,157,440

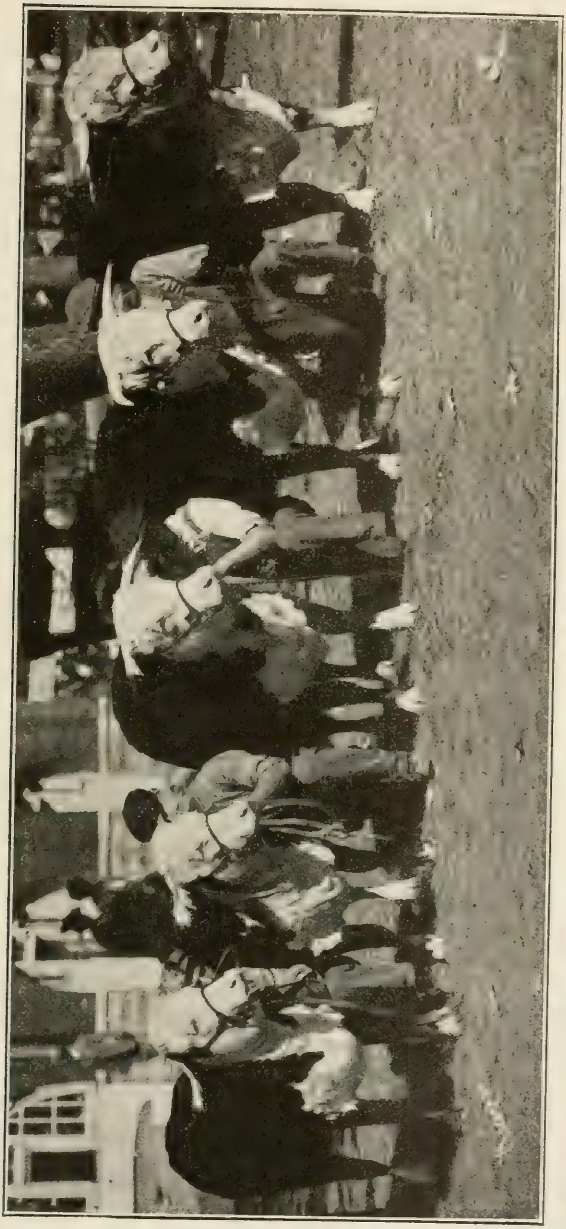
IOWA CROPS, 1914, NUMBER OF ACRES BY COUNTIES.

Counties	Corn Acres	Oats Acres	Spring Wheat Acres	Winter Wheat Acres	Barley Acres	Rye Acres	Flax Acres	Potatoes Acres	Tame Hay Acres	Wild Hay Acres	Alfalfa Acres	Pastures Acres
Adair	100,000	46,000	3,000	6,100	3,000	370	----------	1,060	37,000	3,900	100	115,000
Adams	66,000	23,500	400	15,000	630	240	----------	420	26,700	1,850	270	95,500
Allamakee	41,000	34,800	800	1,300	11,000	1,000	35	950	48,000	1,200	70	164,000
Appanoose	46,000	20,000	200	2,680	----------	1,000	----------	200	32,700	1,200	40	101,000
Audubon	89,200	42,600	4,800	2,000	8,500	140	----------	750	24,800	2,350	425	68,000
Benton	125,000	79,500	350	250	13,600	980	----------	1,200	43,200	4,400	60	104,000
Black Hawk	102,000	56,000	300	1,500	5,400	2,300	----------	2,250	28,800	9,600	70	86,300
Boone	118,500	63,000	1,250	3,300	900	100	----------	1,100	22,900	12,400	230	83,200
Bremer	60,000	50,400	200	310	1,850	1,430	----------	1,150	15,800	19,000	40	70,000
Buchanan	91,000	57,600	200	250	1,200	1,300	----------	700	34,300	11,600	5	100,000
Buena Vista	117,000	85,000	600	360	2,100	40	150	1,400	20,000	15,500	250	75,200
Butler	103,000	74,600	500	360	1,500	2,800	30	1,290	23,200	10,200	5	94,000
Calhoun	120,000	91,800	200	1,200	1,700	----------	50	520	18,000	8,100	70	52,000
Carroll	113,500	77,600	5,000	2,300	5,000	30	60	2,200	21,100	10,500	300	73,400
Cass	106,000	39,100	6,600	24,500	3,700	330	----------	1,050	31,500	1,800	500	92,000
Cedar	100,000	36,300	220	1,300	17,000	800	----------	1,000	42,000	160	50	95,000
Cerro Gordo	95,000	91,600	700	360	4,000	200	500	1,300	24,000	16,900	80	77,000
Cherokee	121,000	81,000	850	260	4,700	50	----------	1,650	24,400	10,300	1,100	80,600
Chickasaw	64,000	58,000	1,700	500	5,300	750	375	1,500	21,300	16,000	----------	84,000
Clarke	53,200	22,500	30	9,200	90	130	----------	215	30,000	240	15	95,000
Clay	99,000	77,800	1,060	220	4,600	470	500	800	20,500	17,800	100	73,300
Clayton	72,200	73,600	570	1,960	11,400	3,200	----------	1,600	58,500	1,400	40	173,000
Clinton	116,500	42,000	600	3,000	11,000	2,100	----------	950	58,000	3,300	110	152,000
Crawford	138,000	66,800	12,400	2,400	6,400	225	----------	1,850	43,500	6,390	2,100	115,100
Dallas	120,000	51,000	950	10,000	1,800	160	----------	400	25,100	4,000	320	94,400
Davis	44,700	23,200	100	1,650	----------	720	----------	320	35,000	35	10	122,100
Decatur	59,900	25,500	----------	9,900	----------	720	----------	100	32,300	640	170	97,000
Delaware	88,400	49,000	120	110	6,900	2,900	----------	920	48,000	6,650	50	120,000
Des Moines	73,000	33,000	100	2,450	380	1,900	----------	820	23,500	120	170	89,500
Dickinson	53,000	40,800	1,800	85	4,200	150	675	490	10,150	15,800	60	46,000
Dubuque	64,900	52,200	440	600	2,470	1,150	----------	1,860	57,700	870	70	157,000
Emmet	55,100	45,000	900	45	5,000	200	750	780	13,000	12,000	15	46,700
Fayette	95,000	67,500	600	740	6,500	2,100	70	1,300	50,600	10,800	100	148,000
Floyd	81,800	72,400	920	450	2,000	2,000	240	1,600	26,300	4,600	100	64,000

Franklin	110,000	86,400	700	360	1,790	120	160	2,200	27,000	14,300	100	87,000
Fremont	112,000	12,000	750	29,100	120	800		600	11,500	4,500	7,300	69,600
Greene	129,000	67,400	630	1,650	1,150	60		660	23,800	8,800	100	79,800
Grundy	95,000	70,000	240	260	8,100	140		2,400	24,500	5,800	15	70,000
Guthrie	103,500	50,200	2,900	3,600	2,450	35		570	28,800	4,200	53	119,000
Hamilton	122,000	81,000	470	720	600		100	670	23,900	10,200	115	74,200
Hancock	99,000	86,500	2,800	35	5,500	250	760	1,000	21,400	25,000	70	84,000
Hardin	100,000	70,500	460	400	850	110	50	1,180	23,900	9,200	90	69,100
Harrison	127,500	21,200	18,700	18,300	1,500	380		750	10,400	7,900	10,500	63,000
Henry	74,000	32,000		1,020	90	1,290		310	24,500		55	89,100
Howard	55,100	52,300	960	1,080	8,200	1,080	1,100	1,050	30,000	9,300	35	74,200
Humboldt	84,000	66,000	1,490	700	1,650	100	230	460	17,000	10,500	150	48,100
Ida	88,000	49,900	1,900	460	10,400	70		790	23,600	2,500	445	55,700
Iowa	92,300	47,600	800	1,150	1,300	500		1,200	36,500	440	70	105,200
Jackson	58,100	30,100	780	1,570	2,550	1,220		920	60,000	1,490	50	167,400
Jasper	131,500	59,800	2,600	5,670	280	480		910	43,800	850	70	143,000
Jefferson	57,600	27,200	340	1,860	400	420		470	26,500		25	84,000
Johnson	90,000	64,000	470	1,630	1,600	2,000		950	45,300	850	110	113,500
Jones	76,600	33,700	300	340	6,150	1,100		580	48,000	290	45	127,000
Keokuk	94,300	44,400	1,600	1,800	500	1,500		570	40,200	200	85	129,000
Kossuth	156,000	133,000	3,900	300	6,600	220	1,100	1,940	27,600	47,000	125	116,000
Lee	54,000	23,700	40	6,400	550	4,700		1,100	33,500	90	90	116,000
Linn	96,500	56,800	920	630	680	1,440		1,100	50,500	2,800	25	178,000
Louisa	63,500	24,000	120	4,000	230	2,100		250	16,300	750	175	66,000
Lucas	42,800	21,200	200	6,300	70	130		420	33,200	150	30	114,000
Lyon	119,000	88,000	5,500	200	21,500	550	50	2,100	10,300	8,750	1,100	57,000
Madison	80,600	28,500	1,400	13,300	1,900	330		630	31,400	840	80	130,000
Mahaska	87,000	48,500	1,300	3,900	1,900	600		600	32,200	360	100	98,800
Marion	78,200	27,800	1,600	11,200	850	400		500	26,500	280	50	109,000
Marshall	113,500	70,700	800	2,900	800	120		1,300	37,900	820	35	81,500
Mills	82,500	18,900	2,700	22,000	400	500		490	13,600	4,300	9,100	67,500
Mitchell	69,000	74,400	2,000	210	6,500	250	1,600	2,700	26,000	2,700	20	59,400
Monona	144,000	22,900	10,600	29,800	2,900	200		840	9,500	15,400	9,200	85,000
Monroe	38,300	13,900	1,600	6,600	120	300		180	31,800	120	40	121,000
Montgomery	82,000	18,300	3,800	27,100	300	550		480	21,000	680	2,375	66,800
Muscatine	73,700	21,600	260	2,640	7,900	2,760		2,500	26,900	950	270	91,000
O'Brien	110,000	80,000	1,900	300	16,700	80	120	4,300	22,700	8,500	300	75,000
Osceola	76,000	61,600	1,430	200	11,000	300	600	1,130	11,100	11,900	50	43,600
Page	104,600	20,000	1,800	32,500	700	1,000		1,076	31,400	980	1,500	97,800
Palo Alto	139,800	83,000	900	50	3,200	150	300	790	10,600	30,600	35	76,200
Plymouth	188,000	85,300	39,000	2,300	11,000	100	20	2,130	23,000	21,500	4,500	102,300
Pocahontas	113,900	90,200	550	420	1,260	170	475	1,100	15,000	18,400	45	61,000
Polk	94,400	38,400	2,300	28,200	250	200		1,860	24,800	3,100	360	71,700
Pottawattamie	197,000	45,700	12,900	34,000	5,600	930		2,300	32,700	9,200	15,400	132,600
Poweshiek	107,600	52,400	900	1,000	1,950	450		900	45,300	550	60	109,000
Ringgold	73,400	29,200	125	10,600	40	190		190	13,000	140	55	112,200

IOWA CROPS, 1914, NUMBER OF ACRES BY COUNTIES—Continued.

Counties	Corn Acres	Oats Acres	Spring Wheat Acres	Winter Wheat Acres	Barley Acres	Rye Acres	Flax Acres	Potatoes Acres	Tame Hay Acres	Wild Hay Acres	Alfalfa Acres	Pastures Acres
Sac	112,000	69,200	370	430	8,400	60	20	1,000	27,800	8,000	325	75,000
Scott	73,800	21,400	520	5,600	28,400	3,100	----------	6,100	31,000	2,600	425	74,300
Shelby	127,000	52,000	9,700	2,580	12,800	270	----------	1,090	30,400	5,300	1,780	90,000
Sioux	161,000	85,000	26,800	1,100	21,500	35	90	3,300	15,800	18,300	2,000	80,500
Story	134,000	69,500	580	2,400	120	70	----------	390	27,800	5,600	190	67,500
Tama	126,000	68,300	2,200	925	12,200	300	----------	1,670	45,500	2,350	90	121,200
Taylor	71,000	21,400	180	23,300	390	600	----------	350	30,800	620	250	104,100
Union	61,000	26,500	560	3,400	150	200	----------	1,500	29,000	760	40	93,300
Van Buren	55,000	21,900	70	2,900	130	1,170	----------	240	31,000	40	215	123,400
Wapello	58,000	22,800	250	7,800	200	1,310	----------	570	31,000	25	30	95,200
Warren	80,800	24,700	760	37,800	500	430	----------	400	38,100	500	85	145,200
Washington	84,800	48,000	340	1,200	480	570	----------	450	36,000	----------	20	99,400
Wayne	67,600	34,400	50	7,000	110	610	----------	190	42,200	100	35	105,100
Webster	135,000	100,000	2,850	900	860	50	400	820	24,000	20,000	85	91,000
Winnebago	59,900	42,600	10,300	50	6,500	40	730	1,180	13,800	24,200	150	54,400
Winneshiek	79,000	66,000	4,100	1,280	18,200	1,540	1,120	1,000	53,000	5,190	70	145,000
Woodbury	196,000	56,300	8,500	10,800	5,700	50	----------	1,560	22,000	13,200	10,500	105,300
Worth	53,700	52,300	5,800	200	5,100	280	1,800	660	17,900	17,200	60	58,400
Wright	111,000	88,000	1,200	350	1,760	75	180	840	25,900	11,300	20	70,400
Total	9,324,300	5,154,200	261,025	538,410	437,400	73,150	14,440	110,205	2,923,250	684,070	88,070	9,375,300



Champion Breeders' Hereford Young Herd, 1914 Iowa State Fair and Exposition, owned by Cyrus A. Tow, Norway, Iowa.

FINAL CROP

AVERAGE YIELD PER ACRE AND

Counties	Corn		Oats		Spring Wheat		Winter Wheat	
	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels
Adair	37	3,700,000	31	1,426,000	13	39,000	20	122,000
Adams	29	1,914,000	33	775,500	15	6,000	24	360,000
Allamakee	46	1,886,000	31	1,078,800	20	16,000	25	32,500
Appanoose	35	1,610,000	32	640,000	16	3,200	21	56,280
Audubon	43	3,835,600	29	1,235,400	8	38,400	22	44,000
Benton	44	5,500,000	38	3,021,000	17	5,950	27	6,750
Black Hawk	38	3,876,000	33	1,848,000	22	6,600	22	33,000
Boone	42	4,977,000	38	2,394,000	16	20,000	22	72,600
Bremer	45	2,700,000	35	1,764,000	17	3,400	21	6,510
Buchanan	42	3,822,000	36	2,073,000	18	3,600	16	4,000
Buena Vista	46	5,382,000	38	3,230,000	14	8,400	19	6,840
Butler	37	3,811,000	30	2,238,000	16	8,000	16	5,760
Calhoun	44	5,280,000	40	3,672,000	15	3,000	19	22,800
Carroll	42	4,767,000	28	2,172,800	14	70,000	24	55,200
Cass	38	4,028,000	29	1,133,900	12	79,200	23	563,500
Cedar	46	4,600,000	34	1,234,200	22	4,840	20	26,000
Cerro Gordo	45	4,275,000	35	3,206,000	13	9,100	18	6,480
Cherokee	37	4,477,000	37	2,997,000	15	12,750	20	5,200
Chickasaw	34	2,176,000	29	1,682,000	14	23,800	17	8,500
Clarke	23	1,223,000	24	540,000	14	420	17	129,400
Clay	40	3,960,000	36	2,800,800	17	17,000	18	3,960
Clayton	46	3,321,200	33	2,428,000	15	8,550	20	39,200
Clinton	46	5,359,000	30	1,260,000	18	10,800	30	90,000
Crawford	45	6,210,000	25	1,670,000	11	136,400	33	79,200
Dallas	41	4,920,000	36	1,836,000	15	14,250	23	230,000
Davis	32	1,430,400	29	672,800	10	1,000	19	31,350
Decatur	30	1,797,000	24	612,000	----	------------	18	178,200
Delaware	41	3,624.000	34	1,666,000	16	1,920	20	2,200
Des Moines	30	2,190,000	30	990,000	19	1,900	23	56,350
Dickinson	35	1,855,000	28	1,142,400	12	21,600	19	1,620
Dubuque	35	2,271,000	36	1,879,200	18	8,120	20	12,000
Emmet	36	1,983,600	33	1,485,000	12	10,800	15	670
Fayette	45	4,275,000	35	2,362,500	15	9,000	21	15,540
Floyd	41	3,353,800	31	2,244,400	15	13,800	30	13,500
Franklin	45	4,950,000	37	3,196,800	17	11,900	21	7,560
Fremont	37	4,144,000	29	348,000	14	10,500	22	640,200
Greene	44	5,676,000	34	2,291,600	17	10,710	25	367,500
Grundy	45	4,275,000	36	2,520,000	15	3,600	21	7,560
Guthrie	41	4,243,500	32	1,606,400	16	46,400	23	82,800
Hamilton	38	4,536,000	37	3,108,000	16	7,520	18	12,960
Hancock	41	4,059,000	32	2,768,000	15	42,000	22	770
Hardin	44	4,400,000	34	2,397,000	17	7,820	18	7,200
Harrison	40	5,100,000	35	742,000	13	243,100	20	366,000
Henry	28	2,072,000	34	1,088,000	----	------------	26	26,520
Howard	36	1,983.000	28	1,464,400	11	10,560	10	10,800
Humboldt	45	3,780,000	39	2,574,000	15	22,350	23	16,100
Ida	46	4,048,000	37	1,846,000	15	28,500	19	8,740
Iowa	37	3,415,100	33	1,570,000	18	14,400	27	31,050
Jackson	46	2,672,600	32	963,200	20	1,560	19	29,830
Jasper	42	5,523,000	39	2,332,200	16	41,600	23	130,410
Jefferson	34	1,958,400	30	816,000	18	6,100	21	39,000
Johnson	41	3,690,000	35	2,240,000	17	8,000	22	35,900
Jones	44	3,370,400	28	943,600	18	5,400	28	9,500
Keokuk	27	2,546,100	30	1,332,000	19	30,400	22	39,600
Kossuth	38	5,928,000	35	4,655,000	13	50,700	17	5,100
Lee	31	1,674,000	29	687,300	12	500	21	134,400

REPORT, 1914.

TOTAL PRODUCT BY COUNTIES.

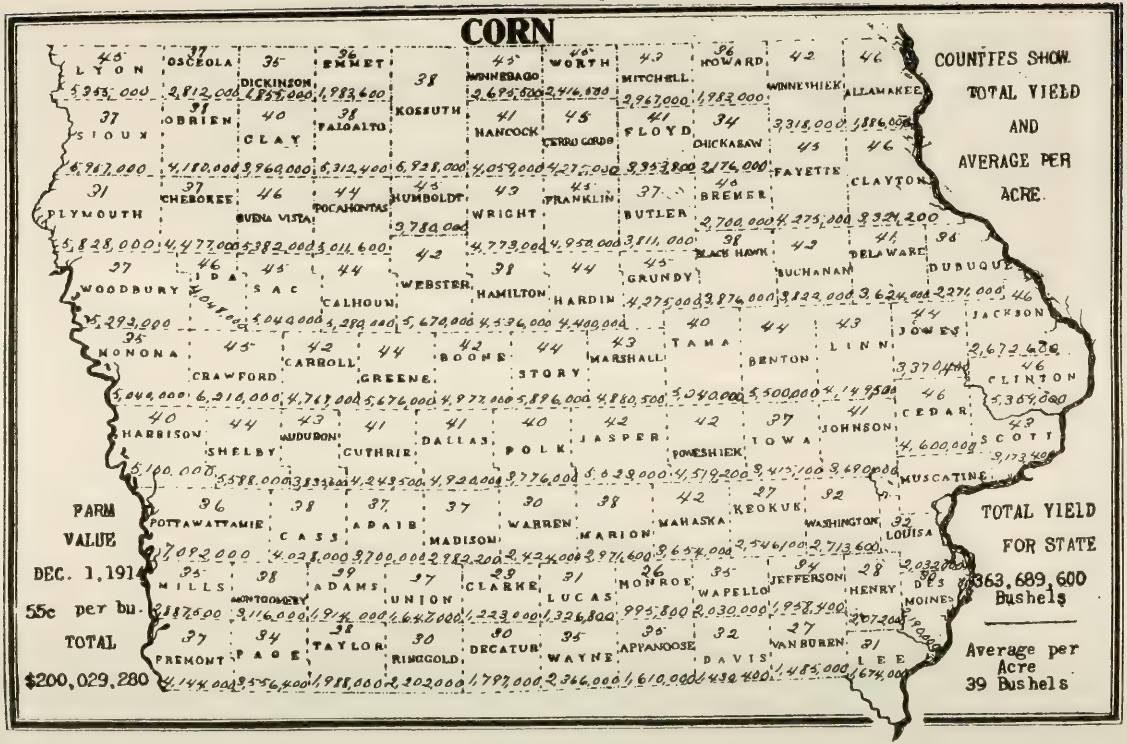
Barley		Rye		Flax Seed		Potatoes		Hay—Tame		Hay—Wild		Alfalfa	
Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Tons per acre	Total Tons	Tons per acre	Total Tons	Tons per acre	Total Tons
21	63,000	12	4,440	----	--------	64	67,840	1.0	37,000	1.5	5,850	3.0	300
25	15,650	30	7,200	----	--------	45	18,900	0.9	24,030	1.2	2,220	2.5	400
24	264,000	19	19,000	10	350	112	106,400	1.9	91,200	1.5	1,800	4.0	280
----	--------	18	18,000	----	--------	75	15,000	1.2	39,240	1.5	1,800	3.0	120
28	238,000	24	3,360	----	--------	105	78,750	1.6	39,680	2.0	4,700	4.0	1,700
28	380,800	20	19,600	----	--------	103	123,600	1.7	73,440	1.8	7,920	1.5	75
27	145,800	17	39,100	----	--------	87	195,750	1.5	43,200	1.2	11,520	3.0	210
27	24,300	20	2,000	----	--------	61	67,100	1.5	34,350	1.1	13,640	2.7	390
30	55,500	15	21,450	----	--------	84	96,600	1.8	28,440	1.4	26,600	2.8	110
35	42,000	16	20,800	----	--------	78	54,600	1.6	54,880	1.3	15,000	3.5	20
32	67,200	18	720	8	1,200	105	147,000	1.6	32,000	1.5	23,250	3.0	750
24	36,000	17	47,600	9	270	66	85,140	1.7	38,440	1.3	13,260	3.0	15
30	51,000	----	--------	10	500	42	21,840	1.3	23,400	1.1	8,900	3.0	210
27	135,000	16	480	11	660	107	235,400	1.9	40,090	1.6	16,800	4.3	1,290
26	96,200	17	5,610	----	--------	77	80,850	1.3	40,950	1.2	2,160	4.0	2,000
30	510,000	26	20,800	----	--------	101	101,000	2.0	84,000	2.0	320	4.0	200
27	108.000	17	3,400	10	5,000	117	152,100	1.5	36,000	1.0	16,900	4.2	340
31	145,700	18	900	----	--------	63	103,950	1.6	39,040	1.2	12,360	3.0	3,300
29	153,700	21	15,750	12	4,500	73	109,500	1.4	29,820	1.4	22,400	----	--------
20	1,800	12	1,560	----	--------	63	13,540	0.6	18,000	1.0	240	1.0	15
28	128,800	18	8,460	10	5,000	69	55,200	1.5	30,750	1.0	17,800	2.5	250
27	307,800	19	60,080	----	--------	100	160,000	1.9	111,150	1.5	2,100	2.2	90
20	220,000	20	42,000	----	--------	98	93,100	1.2	69,600	1.1	3,630	4.5	500
28	179,200	25	5,620	----	--------	64	118,400	1.9	82,650	1.3	8,300	4.0	8.400
25	45,000	20	3,200	----	--------	60	24,000	1.4	35,140	1.2	4,800	3.2	725
----	--------	19	13,680	----	--------	47	15,000	1.1	38,500	1.0	35	2.5	25
----	--------	16	11,520	----	--------	32	3,200	0.8	25,840	0.9	580	2.4	410
29	200,100	18	52,200	----	--------	117	107,640	1.7	81,600	1.3	8,600	2.5	125
26	9,880	21	39,900	----	--------	143	117,260	1.1	25,850	1.5	200	3.0	510
22	92.400	14	2,100	9	6,080	75	13,750	1.6	16,240	1.2	18,960	2.0	120
27	66,690	16	18,400	----	--------	105	195,300	1.2	69,240	0.8	700	3.0	210
26	130,000	11	2,200	9	6,750	78	60,840	1.5	19,500	1.2	14,400	2.7	40
27	175,500	20	42,000	10	700	92	119,600	1.6	80,960	1.0	10,800	3.2	320
25	50,000	18	36,000	8	1,920	94	150.400	1.6	42.080	1.1	5,060	2.5	250
27	48.330	18	2,160	11	1,760	98	215.600	1.6	43.200	1.0	14,300	2.0	200
27	3,240	21	16,800	----	--------	75	45.000	1.3	14.850	1.2	5,400	3.1	22,600
25	28,750	25	1,500	----	--------	85	56.100	1.6	38.080	1.1	9,700	2.8	280
26	210,600	25	3,500	----	--------	88	211,200	1.7	41,650	1.3	7,500	5.0	75
24	58,800	17	600	----	--------	54	30,780	1.8	51,840	1.6	6,700	2.2	120
28	16,800	----	--------	10	1,000	60	40.200	1.5	35,850	1.1	11,200	2.7	310
25	137,500	17	4,250	10	7,600	125	125,000	1.6	34,240	1.2	30,000	3.5	245
22	18,700	18	1,980	8	400	61	71,980	1.7	40,630	1.2	11,000	4.5	400
30	45,000	20	7,600	----	--------	100	75,000	2.2	22,880	2.1	16,500	4.5	47,200
25	2,250	20	25.800	----	--------	62	19,220	1.5	36,750	----	--------	3.2	180
22	180.400	16	17,280	11	12.100	86	90,300	1.8	54,000	1.2	11,100	2.0	70
34	56,100	20	2,000	11	2,530	101	46.460	1.6	27,200	1.1	11,500	3.3	500
32	332,800	20	1,400	----	--------	94	74.200	1.5	35,400	1.5	3,750	4.0	1,780
31	40,300	20	10,000	----	--------	93	111.600	1.6	58,400	1.2	530	4.9	340
32	81,600	19	23,180	----	--------	120	110.400	1.8	108,000	1.3	1,900	5.0	250
32	8,960	30	14.400	----	--------	75	68.250	1.5	65,700	1.1	900	4.0	280
31	12,400	16	6,700	----	--------	85	33,900	1.2	31,800	----	--------	3.3	80
26	41,600	20	40.000	----	--------	97	92.000	1.4	63,400	1.0	850	2.8	300
23	141,400	15	16,500	----	--------	140	81,000	1.7	81,600	1.5	440	3.0	135
24	12,000	25	37,500	----	--------	88	50,000	1.5	60,300	1.3	260	3.0	255
32	211,200	17	3,700	10	11,000	105	204.000	1.4	38,600	1.2	56,400	3.5	440
25	13,800	20	94,000	----	--------	69	75,900	1.3	43,500	1.5	130	3.2	290

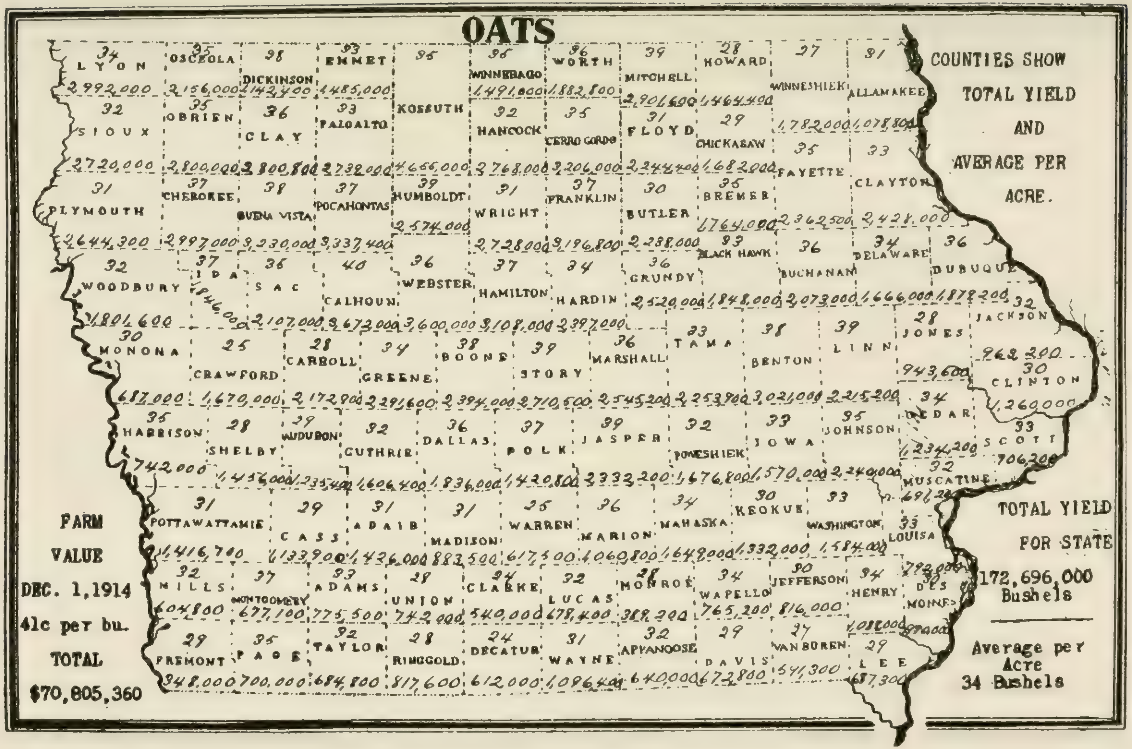
FINAL CROP

Counties	Corn		Oats		Spring Wheat		Winter Wheat	
	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels
Linn	43	4,149,500	39	2,215,200	22	20,200	21	13,200
Louisa	32	2,032,000	33	792,000	20	2,400	21	84,000
Lucas	31	1,326,800	32	678,400	16	3,200	20	126,000
Lyon	45	5,355,000	34	2,992,000	14	77,000	17	3,400
Madison	37	2,982,200	31	883,500	13	18,200	23	305,900
Mahaska	42	3,654,000	34	1,649,000	16	20,800	21	81,900
Marion	38	2,971,600	36	1,060,800	14	22,400	24	340,800
Marshall	43	4,880,500	36	2,545,200	18	14,400	22	63,800
Mills	35	2,887,500	32	604,800	10	27,000	21	462,000
Mitchell	43	2,967,000	39	2,901,600	17	34,000	25	5,200
Monona	35	5,040,000	30	687,000	14	148,000	20	596,000
Monroe	26	995,800	28	389,200	18	28,800	21	138,600
Montgomery	38	3,116,000	37	677,100	14	53,200	23	623,300
Muscatine	42	3,095,400	32	691,200	15	3,900	19	50,200
O'Brien	38	4,180,000	35	2,800,000	18	34,200	19	5,700
Osceola	37	2,812,000	35	2,156,000	16	22,800	20	4,000
Page	34	3,556,400	35	700,000	12	21,600	23	747,500
Palo Alto	38	5,312,400	33	2,739,000	10	9,000	20	1,000
Plymouth	31	5,828,000	31	2,644,300	11	429,000	15	34,500
Pocahontas	44	5,011,600	37	3,337,400	20	11,000	18	7,500
Polk	40	3,776,000	37	1,420,800	16	36,800	26	733,000
Pottawattamie	36	7,092,000	31	1,416,700	12	154,800	21	714,000
Poweshiek	42	4,519,200	32	1,676,800	15	13,500	28	28,000
Ringgold	30	2,202,000	28	817,600	17	2,100	19	201,400
Sac	45	5,040,000	35	2,107,000	15	3,500	21	9,000
Scott	43	3,173,400	33	706,200	20	10,400	22	123,200
Shelby	44	5,588,000	28	1,456,000	11	106,700	20	51,600
Sioux	37	5,957,000	32	2,720,000	13	348,400	18	19,800
Story	44	5,896,000	39	2,710,500	17	9,900	27	64,800
Tama	40	5,040,000	33	2,253,900	19	41,800	24	22,200
Taylor	28	1,988,000	32	684,800	12	2,200	20	466,000
Union	27	1,647,000	28	742,000	18	10,000	19	64,600
Van Buren	27	1,485,000	27	591,300	12	800	20	50,000
Wapello	35	2,030,000	34	765,200	17	4,200	26	202,800
Warren	30	2,424,000	25	617,500	16	12,200	21	793,800
Washington	32	2,713,600	33	1,584,000	19	6,500	22	26,400
Wayne	35	2,366,000	31	1,096,400	15	750	21	147,000
Webster	42	5,670,000	36	3,600,000	15	42,700	19	17,100
Winnebago	45	2,695,500	35	1,491,000	11	113,300	15	750
Winneshiek	42	3,318,000	27	1,782,000	14	57,400	16	20,500
Woodbury	27	5,292,000	32	1,801,600	12	102,000	19	205,200
Worth	45	2,416,500	36	1,882,800	12	69,600	18	3,600
Wright	43	4,773,000	31	2,728,000	15	18,000	19	6,600
Totals		363,689,600		172,696,000		3,389,070		11,670,710
Averages	30		34		13		22	

REPORT, 1914—Continued.

Barley		Rye		Flax Seed		Potatoes		Hay—Tame		Hay—Wild		Alfalfa	
Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Bushels per acre	Total Bushels	Tons per acre	Total Tons	Tons per acre	Total Tons	Tons per acre	Total Tons
27	18,400	18	25,900	----	--------	98	107,800	1.3	65,700	1.6	3,000	4.0	100
25	5,700	18	37,800	----	--------	88	22,000	1.3	21,200	1.5	1,100	3.2	560
22	1,540	15	2,000	----	--------	27	11,300	1.3	43,200	1.7	250	2.5	75
27	580,500	16	8,800	7	350	112	235,000	1.6	16,500	1.4	12,250	3.8	4,180
24	45,600	18	5,900	----	--------	122	76,800	1.2	37,700	1.0	840	3.2	260
28	53,200	16	9,600	----	--------	49	32,000	1.4	45,000	1.3	470	3.7	370
25	21,200	23	9,200	----	--------	72	36,000	1.2	31,800	1.2	340	2.2	110
26	20,800	20	2,400	----	--------	84	109,000	1.5	56,800	1.0	820	4.0	140
23	9,200	20	10,000	----	--------	70	34,000	1.8	24,500	1.0	4,300	3.7	33,700
26	169,000	20	5,000	16	25,600	122	329,000	1.9	49,400	1.8	4,900	3.0	60
26	75,400	10	2,000	----	--------	82	68,900	1.9	18,000	1.9	29,260	3.8	35,000
24	2,800	14	4,200	----	--------	83	14,900	0.8	25,400	1.0	120	3.0	120
30	9,000	19	10,400	----	--------	65	31,000	1.4	29,400	1.2	820	3.9	9,260
23	181,700	18	49,700	----	--------	83	217,000	1.0	26,900	1.0	950	2.0	540
27	450,900	12	960	10	1,200	90	387,000	1.9	43,100	1.3	11,000	2.0	600
30	330,000	15	4,500	10	6,000	125	141,000	1.5	16,600	1.5	17,850	3.5	175
25	17,500	21	21,000	----	--------	73	78,000	1.5	47,100	1.5	1,470	3.3	4,950
30	96,000	16	2,400	9	2,700	67	52,900	1.7	18,000	1.2	36,700	4.0	140
23	253,000	15	1,500	10	200	62	132,000	1.2	27,600	1.2	25,800	4.0	18,000
20	25,200	20	3,400	11	5,200	116	127,000	1.6	24,000	1.3	23,900	3.0	135
21	5,200	20	4,000	----	--------	53	98,500	1.6	39,700	1.2	3,720	3.7	1,330
25	140,000	18	16,700	----	--------	82	108,000	1.4	45,800	1.3	12,000	3.6	55,400
33	64,300	17	7,600	----	--------	60	54,000	1.5	68,000	1.0	550	3.0	180
23	920	18	3,400	----	--------	61	11,600	1.1	47,300	0.9	130	3.6	200
29	243,600	25	1,500	12	240	81	81,000	1.6	44,500	1.2	9,600	2.8	940
23	653,000	17	52,700	----	--------	87	500,000	1.0	31,000	1.0	2,600	4.1	1,740
23	294,400	21	5,700	----	--------	85	92,600	1.4	42,600	1.4	7,400	4.0	7,120
24	516,000	11	400	13	1,170	89	303,000	1.0	15,800	0.7	12,800	2.8	5,600
28	3,400	24	1,700	----	--------	68	26,500	1.4	38,900	1.0	5,600	3.0	570
26	317,200	18	5,400	----	--------	144	240,000	1.7	77,400	1.0	2,350	2.8	250
33	11,500	20	12,000	----	--------	66	23,000	1.2	37,000	1.0	620	3.0	750
25	3,800	19	3,800	----	--------	66	99,000	0.7	20,300	1.0	760	3.1	125
22	2,900	18	21,000	----	--------	46	11,000	1.1	34,100	1.3	50	3.0	645
20	4,000	17	22,300	----	--------	62	35,300	1.1	34,100	1.5	35	4.0	120
20	10,000	20	8,600	----	--------	82	32,800	1.2	45,700	1.2	600	2.8	240
28	13,400	23	13,100	----	--------	50	22,500	2.3	82,800	----	--------	3.0	60
23	2,500	16	10,200	----	--------	70	13,300	0.9	38,000	1.6	160	4.5	160
30	25,800	20	1,000	10	4,000	50	41,000	1.5	36,000	1.1	22,000	2.8	240
24	156,000	20	800	10	7,300	127	149,000	1.9	26,200	1.5	36,300	4.0	600
24	436,800	21	32,300	9	10,100	75	75,000	1.9	47,700	1.7	8,800	4.0	280
22	125,400	18	900	----	--------	71	110,000	1.5	33,000	1.1	14,500	3.3	34,650
28	142,800	20	5,600	9	16,200	124	81,800	2.1	37,600	1.6	27,500	1.2	72
24	42,200	16	1,200	15	2,700	62	52,000	1.5	38,800	1.1	12,400	3.8	76
26	11,423,310	19	1,369,260	11	152,280	87	9,540,200	1.4	4,234,370	1.3	860,280	3.6	319,853


CORN
COUNTIES SHOW
TOTAL YIELD
AND
AVERAGE PER
ACRE.
45 LYON 5,353,000
37 OSCEOLA 2,812,000
35 DICKINSON 1,855,000
36 EMMET 1,983,600
38 KOSSUTH 6,928,000
45 WINNEBAGO 2,695,600
46 WORTH 2,416,180
43 MITCHELL 2,967,000
36 HOWARD 1,983,000
42 WINNESHIEK 3,318,000
46 ALLAMAKEE 1,886,000
37 SIOUX 6,967,000
38 OBRIEN 4,180,000
40 CLAY 3,960,000
38 PALOALTO 6,312,400
41 HANCOCK 4,059,000
45 CERRO GORDO 4,275,000
41 FLOYD 3,353,800
34 CHICKASAW 2,176,000
45 FAYETTE 4,275,000
46 CLAYTON 3,324,200
31 PLYMOUTH 5,828,000
37 CHEROKEE 4,477,000
46 BUENA VISTA 5,382,000
44 POCAHONTAS 3,011,600
45 HUMBOLDT 3,780,000
43 WRIGHT 4,773,000
45 FRANKLIN 4,950,000
37 BUTLER 3,811,000
46 BREMER 2,700,000
38 BLACK HAWK 3,876,000
42 BUCHANAN 3,122,000
41 DELAWARE 3,624,000
36 DUBUQUE 2,271,000
37 WOODBURY 5,293,000
46 IDA 4,048,000
45 SAC 5,040,000
44 CALHOUN 5,280,000
42 WEBSTER 5,670,000
38 HAMILTON 4,536,000
44 HARDIN 4,400,000
45 GRUNDY 4,275,000
40 TAMA 5,040,000
44 BENTON 5,500,000
43 LINN 4,149,500
44 JONES 3,370,400
46 JACKSON 2,672,680
46 CLINTON 5,369,000
35 MONONA 5,044,000
45 CRAWFORD 6,216,000
42 CARROLL 4,767,000
44 GREENE 5,676,000
42 BOONE 4,977,000
44 STORY 5,896,000
43 MARSHALL 4,880,500
46 CEDAR 4,600,000
43 SCOTT 3,173,400
40 HARRISON 5,100,000
44 SHELBY 5,588,000
43 AUDUBON 3,834,200
41 GUTHRIE 4,243,500
41 DALLAS 4,924,000
40 POLK 3,776,000
42 JASPER 5,629,000
42 POWESHIEK 4,519,200
37 IOWA 3,415,100
41 JOHNSON 3,690,000
MUSCATINE
36 POTTAWATTAMIE 7,092,000
38 CASS 4,028,000
37 ADAIR 3,700,000
37 MADISON 2,982,200
30 WARREN 2,424,000
38 MARION 2,971,600
42 MAHASKA 3,654,000
27 KEOKUK 2,546,100
32 WASHINGTON 2,713,600
32 LOUISA 2,032,000
35 MILLS 2,187,500
38 MONTGOMERY 3,116,000
29 ADAMS 1,914,000
27 UNION 1,647,000
29 CLARKE 1,223,000
31 LUCAS 1,326,800
26 MONROE 995,800
35 WAPELLO 2,030,000
34 JEFFERSON 1,958,400
28 HENRY 2,072,000
30 DES MOINES 2,190,000
37 FREMONT 4,144,000
34 PAGE 3,556,400
38 TAYLOR 1,988,000
30 RINGGOLD 2,202,000
30 DECATUR 1,797,000
35 WAYNE 2,366,000
36 APPANOOSE 1,610,000
32 DAVIS 1,432,400
27 VAN BUREN 1,485,000
31 LEE 1,674,000
FARM
VALUE
DEC. 1, 1914
55c per bu.
TOTAL
$200,029,280
TOTAL YIELD
FOR STATE
363,689,600
Bushels
Average per
Acre
39 Bushels



OATS

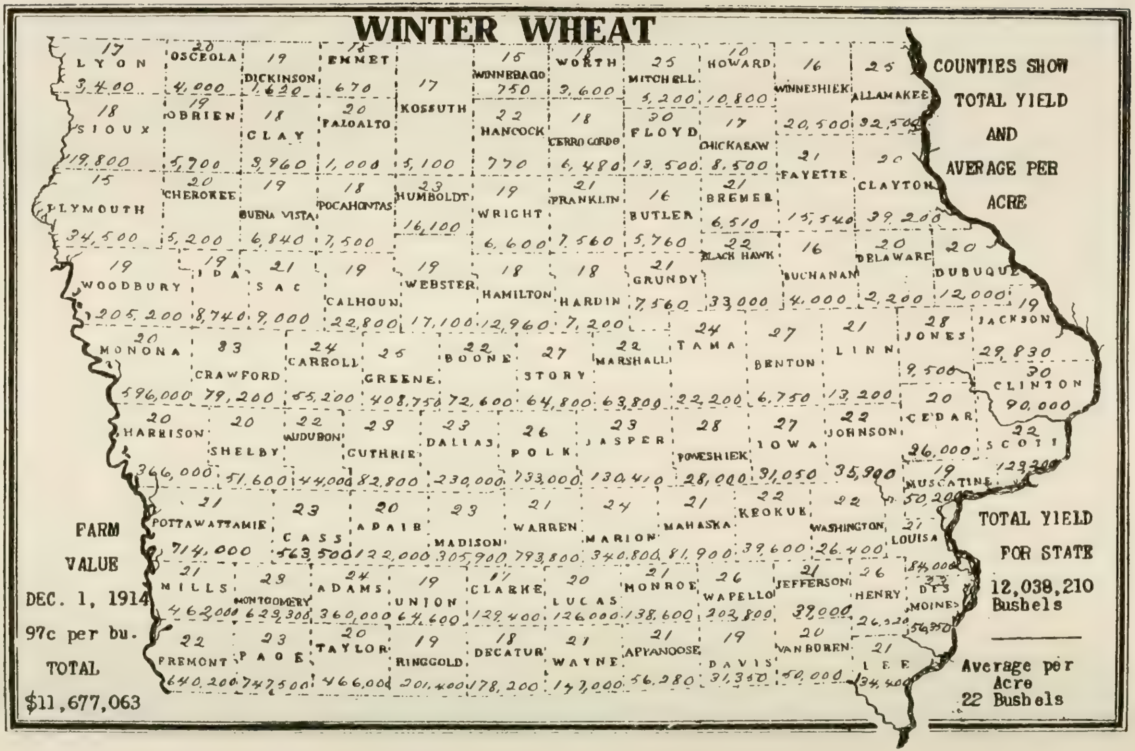
COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE.

TOTAL YIELD FOR STATE 172,696,000 Bushels

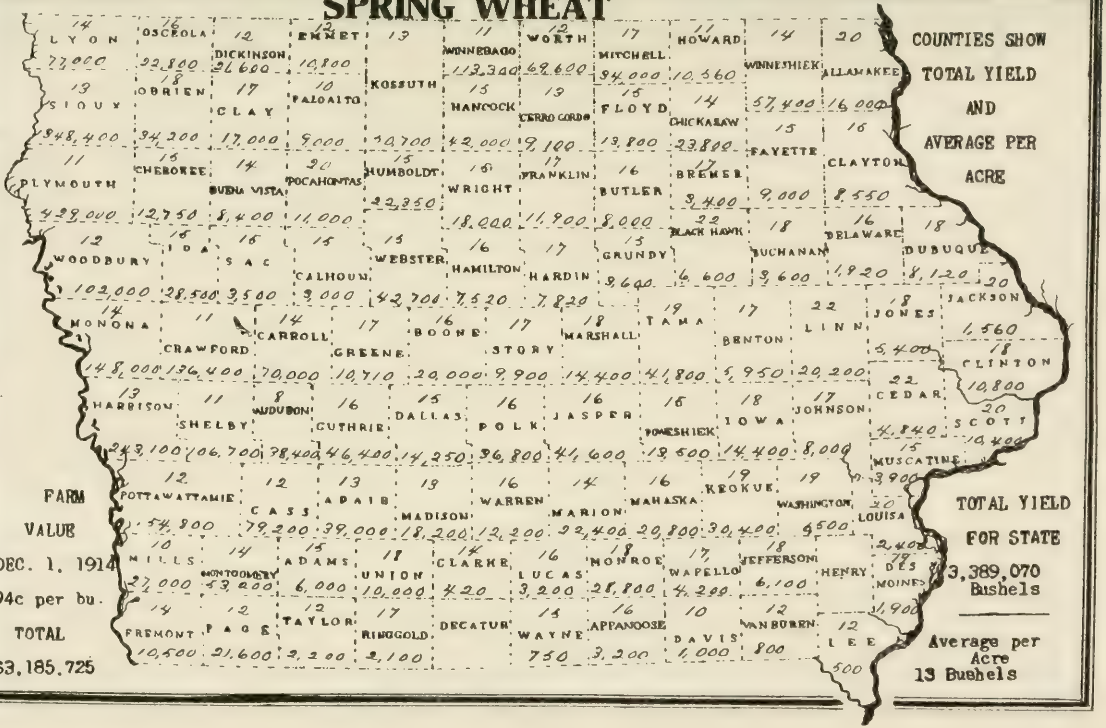
Average per Acre 34 Bushels

FARM VALUE DEC. 1, 1914 41c per bu. TOTAL $70,805,360

34 LYON 2,992,000
35 OSCEOLA 2,156,000
38 DICKINSON 2,142,400
33 EMMET 1,485,000
35 KOSSUTH 4,656,000
36 WINNEBAGO 1,491,000
36 WORTH 1,882,800
39 MITCHELL 2,901,600
28 HOWARD 1,464,400
27 WINNESHIEK 1,782,000
31 ALLAMAKEE 1,078,800
32 SIOUX 2,720,000
35 OBRIEN 2,800,000
36 CLAY 2,800,800
33 PALOALTO 2,732,000
32 HANCOCK 2,768,000
35 CERRO GORDO 3,206,000
31 FLOYD 2,244,400
29 CHICKASAW 1,682,000
35 FAYETTE 2,362,500
33 CLAYTON 2,428,000
31 PLYMOUTH 2,644,300
37 CHEROKEE 2,997,000
38 BUENA VISTA 3,230,000
37 POCAHONTAS 3,337,400
39 HUMBOLDT 2,574,000
31 WRIGHT 2,728,000
37 FRANKLIN 3,196,800
30 BUTLER 2,288,000
35 BREMER 1,764,000
32 WOODBURY 4,801,600
37 IDA 1,846,000
36 SAC 2,107,000
40 CALHOUN 3,673,000
36 WEBSTER 3,600,000
37 HAMILTON 3,108,000
34 HARDIN 2,397,000
36 GRUNDY 2,520,000
33 BLACK HAWK 1,848,000
36 BUCHANAN 2,073,000
34 DELAWARE 1,666,000
36 DUBUQUE 1,878,200
32 JACKSON 962,200
30 MONONA 687,000
25 CRAWFORD 1,670,000
28 CARROLL 2,172,900
34 GREENE 2,291,600
38 BOONE 2,394,000
39 STORY 2,710,500
36 MARSHALL 2,545,200
33 TAMA 2,253,900
38 BENTON 3,021,000
39 LINN 2,215,200
28 JONES 943,600
30 CLINTON 1,260,000
35 HARRISON 742,000
28 SHELBY 1,456,000
29 AUDUBON 1,235,400
32 GUTHRIE 1,606,400
36 DALLAS 1,836,000
37 POLK 1,420,800
39 JASPER 2,332,200
32 POWESHIEK 1,676,800
33 IOWA 1,570,000
35 JOHNSON 2,240,000
34 CEDAR 1,234,200
33 SCOTT 706,200
32 MUSCATINE 691,2
31 POTTAWATTAMIE 1,416,700
29 CASS 1,133,900
31 ADAIR 1,426,000
31 MADISON 883,500
25 WARREN 617,500
36 MARION 1,060,800
34 MAHASKA 1,649,000
30 KEOKUK 1,332,000
33 WASHINGTON 1,584,000
33 LOUISA 793,000
32 MILLS 604,800
37 MONTGOMERY 677,100
33 ADAMS 775,500
28 UNION 742,000
24 CLARKE 540,000
32 LUCAS 678,400
28 MONROE 389,200
34 WAPELLO 765,200
30 JEFFERSON 816,000
34 HENRY 1,088,000
30 DES MOINES 973,000
29 FREMONT 948,000
35 PAGE 700,000
32 TAYLOR 684,800
28 RINGGOLD 817,600
24 DECATUR 612,000
31 WAYNE 1,096,400
32 APPANOOSE 640,000
29 DAVIS 672,800
27 VAN BUREN 541,300
29 LEE 687,300


WINTER WHEAT
COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE
LYON 17 3,400
OSCEOLA 20 4,000
DICKINSON 19 1,620
EMMET 15 670
KOSSUTH 17 5,100
WINNEBAGO 15 750
WORTH 18 3,600
MITCHELL 25 5,200
HOWARD 10 10,800
WINNESHIEK 16 20,500
ALLAMAKEE 25 32,500
SIOUX 18 19,800
OBRIEN 19 5,700
CLAY 18 3,960
PALOALTO 20 1,000
HANCOCK 22 770
CERRO GORDO 18 6,480
FLOYD 30 13,500
CHICKASAW 17 8,500
FAYETTE 21 15,540
CLAYTON 20 39,200
PLYMOUTH 15 34,500
CHEROKEE 20 5,200
BUENA VISTA 19 6,840
POCAHONTAS 18 7,500
HUMBOLDT 23 16,100
WRIGHT 19 6,600
FRANKLIN 21 7,560
BUTLER 16 5,760
BREMER 21 6,510
BLACK HAWK 22 33,000
BUCHANAN 16 4,000
DELAWARE 20 2,200
DUBUQUE 20 12,000
WOODBURY 19 205,200
IDA 19 8,740
SAC 21 9,000
CALHOUN 19 22,800
WEBSTER 19 17,100
HAMILTON 18 12,960
HARDIN 18 7,200
GRUNDY 21 7,560
JACKSON 19 29,830
MONONA 20 596,000
CRAWFORD 33 79,200
CARROLL 24 55,200
GREENE 25 408,750
BOONE 22 72,600
STORY 27 64,800
MARSHALL 22 63,800
TAMA 24 22,200
BENTON 27 6,750
LINN 21 13,200
JONES 28 9,500
CLINTON 30 90,000
HARRISON 20 366,000
SHELBY 20 51,600
AUDUBON 22 44,000
GUTHRIE 29 82,800
DALLAS 23 230,000
POLK 26 733,000
JASPER 23 130,410
POWESHIEK 28 28,000
IOWA 27 31,050
JOHNSON 22 35,900
CEDAR 20 26,000
SCOTT 22 123,300
MUSCATINE 19 50,200
POTTAWATTAMIE 21 714,000
CASS 23 563,500
ADAIR 20 122,000
MADISON 23 305,900
WARREN 21 793,800
MARION 24 340,800
MAHASKA 21 81,900
KEOKUK 22 39,600
WASHINGTON 22 26,400
LOUISA 21 84,000
MILLS 21 462,000
MONTGOMERY 29 629,300
ADAMS 24 360,000
UNION 19 64,600
CLARKE 17 129,400
LUCAS 20 126,000
MONROE 21 138,600
WAPELLO 26 202,800
JEFFERSON 21 39,000
HENRY 26 26,320
DES MOINES 33 56,350
FREMONT 22 640,200
PAGE 23 747,500
TAYLOR 20 466,000
RINGGOLD 19 201,400
DECATUR 18 178,200
WAYNE 21 147,000
APPANOOSE 21 56,280
DAVIS 19 31,350
VAN BUREN 20 50,000
LEE 21 134,400
FARM VALUE DEC. 1, 1914 97c per bu. TOTAL $11,677,063
TOTAL YIELD FOR STATE 12,038,210 Bushels
Average per Acre 22 Bushels

SPRING WHEAT


14 LYON 77,000
16 OSCEOLA 22,800
12 DICKINSON 21,600
12 EMMET 10,800
13 KOSSUTH 30,700
11 WINNEBAGO 113,340
12 WORTH 69,600
17 MITCHELL 94,000
11 HOWARD 10,560
14 WINNESHIEK 57,400
20 ALLAMAKEE 16,000
13 SIOUX 848,400
18 OBRIEN 34,200
17 CLAY 17,000
10 PALOALTO 9000
15 HANCOCK 42,000
13 CERRO GORDO 9,100
15 FLOYD 13,800
14 CHICKASAW 23,800
15 FAYETTE 9,000
16 CLAYTON 8,550
11 PLYMOUTH 429,000
15 CHEROKEE 12,750
14 BUENA VISTA 8,400
20 POCAHONTAS 11,000
15 HUMBOLDT 22,350
16 WRIGHT 18,000
17 FRANKLIN 11,900
16 BUTLER 8,000
17 BREMER 3,400
22 BLACK HAWK 6,600
18 BUCHANAN 3,600
16 DELAWARE 1,920
18 DUBUQUE 8,120
12 WOODBURY 102,000
16 IDA 28,500
16 SAC 3,500
15 CALHOUN 3,000
15 WEBSTER 42,700
16 HAMILTON 7,520
17 HARDIN 7,820
15 GRUNDY 9,640
20 JACKSON 1,560
14 MONONA 148,000
11 CRAWFORD 136,400
14 CARROLL 70,000
17 GREENE 10,710
16 BOONE 20,000
17 STORY 9,900
18 MARSHALL 14,400
19 TAMA 41,800
17 BENTON 5,950
22 LINN 20,200
18 JONES 5,400
18 CLINTON 10,800
13 HARRISON 243,100
11 SHELBY 106,700
8 AUDUBON 38,400
16 GUTHRIE 46,400
15 DALLAS 14,250
16 POLK 36,800
16 JASPER 41,600
16 POWESHIEK 13,500
18 IOWA 14,400
17 JOHNSON 8,000
22 CEDAR 4,840
20 SCOTT 10,400
15 MUSCATINE 3,900
12 POTTAWATTAMIE 54,800
12 CASS 79,200
13 ADAIR 39,000
13 MADISON 18,200
16 WARREN 12,200
14 MARION 22,400
16 MAHASKA 20,800
19 KEOKUK 30,400
19 WASHINGTON 6500
20 LOUISA 2,400
10 MILLS 27,000
14 MONTGOMERY 53,200
15 ADAMS 6,000
18 UNION 10,000
14 CLARKE 420
16 LUCAS 3,200
18 MONROE 28,800
17 WAPELLO 4,200
18 JEFFERSON 6,100
HENRY
17 DES MOINES 1,900
14 FREMONT 10,500
12 PAGE 21,600
12 TAYLOR 2,200
17 RINGGOLD 2,100
DECATUR
15 WAYNE 750
16 APPANOOSE 3,200
10 DAVIS 1,000
12 VAN BUREN 800
12 LEE 500

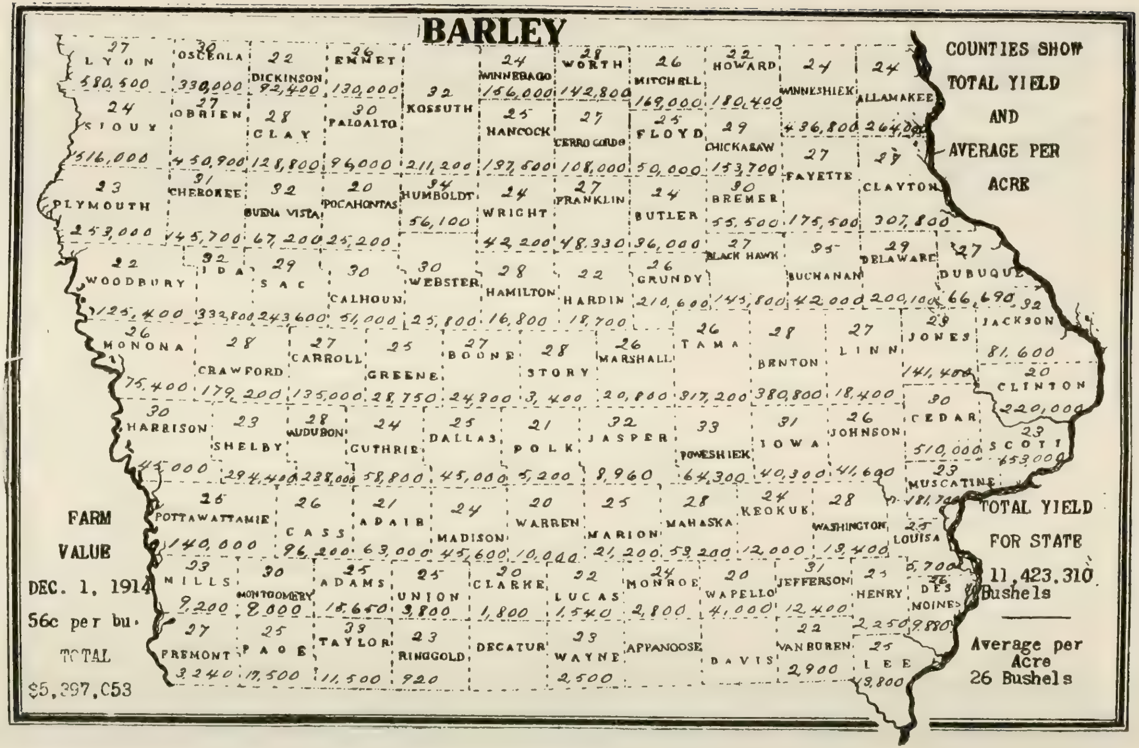
COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE

TOTAL YIELD FOR STATE 3,389,070 Bushels

Average per Acre 13 Bushels

FARM VALUE DEC. 1, 1914 94c per bu. TOTAL $3,185,725

BARLEY

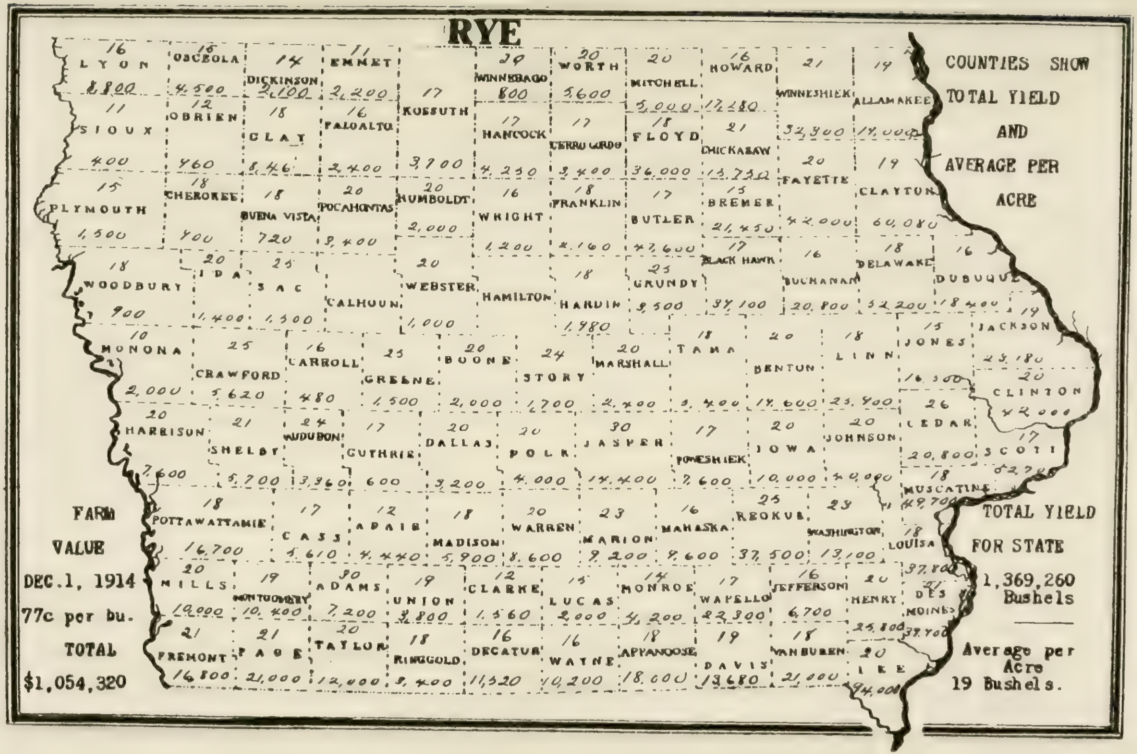

27 LYON 580,500
30 OSCEOLA 330,000
22 DICKINSON 92,400
26 EMMET 130,000
32 KOSSUTH 211,200
24 WINNEBAGO 156,000
28 WORTH 142,800
26 MITCHELL 169,000
22 HOWARD 180,400
24 WINNESHIEK 436,800
24 ALLAMAKEE 264,000
24 SIOUX 516,000
27 OBRIEN 450,900
28 CLAY 128,800
30 PALOALTO 96,000
25 HANCOCK 197,600
27 CERRO GORDO 108,000
25 FLOYD 50,000
29 CHICKASAW 153,700
27 FAYETTE 175,500
27 CLAYTON 307,800
23 PLYMOUTH 253,000
31 CHEROKEE 145,700
32 BUENA VISTA 67,200
20 POCAHONTAS 25,200
34 HUMBOLDT 56,100
24 WRIGHT 42,200
27 FRANKLIN 48,330
24 BUTLER 96,000
30 BREMER 55,500
27 BLACK HAWK 145,800
35 BUCHANAN 42,000
29 DELAWARE 200,100
27 DUBUQUE 66,690
22 WOODBURY 125,400
32 IDA 332,800
29 SAC 243,600
30 CALHOUN 51,000
30 WEBSTER 25,800
28 HAMILTON 16,800
22 HARDIN 18,700
26 GRUNDY 210,600
32 JACKSON 81,600
26 MONONA 75,400
28 CRAWFORD 179,200
27 CARROLL 135,000
25 GREENE 28,750
27 BOONE 24,300
28 STORY 3,400
26 MARSHALL 20,800
26 TAMA 317,200
28 BRNTON 380,800
27 LINN 18,400
29 JONES 141,400
20 CLINTON 220,000
30 HARRISON 45,000
23 SHELBY 294,400
28 AUDUBON 238,000
24 GUTHRIE 58,800
25 DALLAS 45,000
21 POLK 5,200
32 JASPER 8,960
33 POWESHIEK 64,300
31 IOWA 40,300
26 JOHNSON 41,600
30 CEDAR 510,000
23 SCOTT 653,000
23 MUSCATINE 181,700
26 POTTAWATTAMIE 140,000
26 CASS 96,200
21 ADAIR 63,000
24 MADISON 45,600
20 WARREN 10,000
25 MARION 21,200
28 MAHASKA 53,200
24 KEOKUK 12,000
28 WASHINGTON 19,400
25 LOUISA 5,700
23 MILLS 9,200
30 MONTGOMERY 8,000
25 ADAMS 15,650
25 UNION 3,800
20 CLARKE 1,800
22 LUCAS 1,540
24 MONROE 2,800
20 WAPELLO 4,000
31 JEFFERSON 12,400
25 HENRY 2,250
26 DES MOINES 9,880
27 FREMONT 3,240
25 PAGE 17,500
33 TAYLOR 11,500
23 RINGGOLD 920
DECATUR
23 WAYNE 2,500
APPANOOSE
DAVIS
22 VAN BUREN 2,900
25 LEE 13,800

COUNTIES SHOW
TOTAL YIELD
AND
AVERAGE PER
ACRE

TOTAL YIELD
FOR STATE
11,423.310
Bushels

Average per
Acre
26 Bushels

FARM
VALUE
DEC. 1, 1914
56c per bu.
TOTAL
$5,397,053



RYE

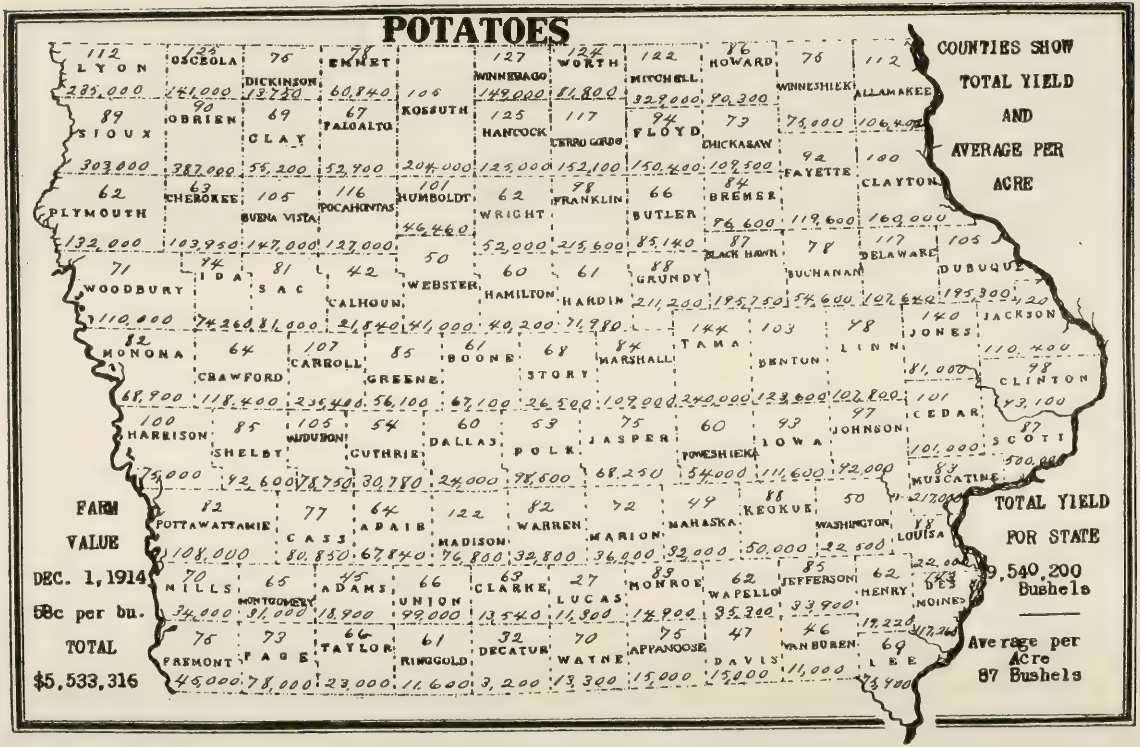
COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE

TOTAL YIELD FOR STATE 1,369,260 Bushels

Average per Acre 19 Bushels.

FARM VALUE DEC. 1, 1914 77c per bu. TOTAL $1,054,320

16 LYON 2,800
16 OSCEOLA 4,500
14 DICKINSON 2,100
11 EMMET 2,200
17 KOSSUTH 3,700
29 WINNEBAGO 800
20 WORTH 5,600
20 MITCHELL 5,000
16 HOWARD 12,280
21 WINNESHIEK 32,300
19 ALLAMAKEE 14,000
11 SIOUX 400
12 OBRIEN 460
18 CLAY 8,46
16 PALOALTO 2,400
17 HANCOCK 4,250
17 CERRO GORDO 3,400
18 FLOYD 36,000
21 CHICKASAW 13,750
20 FAYETTE 42,000
19 CLAYTON 60,080
15 PLYMOUTH 1,500
18 CHEROKEE 400
18 BUENA VISTA 720
20 POCAHONTAS 8,400
20 HUMBOLDT 2,000
16 WRIGHT 1,200
18 FRANKLIN 2,160
17 BUTLER 47,600
15 BREMER 21,450
17 BLACK HAWK 37,100
16 BUCHANAN 20,800
18 DELAWARE 52,200
16 DUBUQUE 18,400
18 WOODBURY 900
20 IDA 1,400
25 SAC 1,500
CALHOUN
20 WEBSTER 1,000
HAMILTON
18 HARDIN 1,980
25 GRUNDY 9,500
10 MONONA 2,000
25 CRAWFORD 5,620
16 CARROLL 480
25 GREENE 1,500
20 BOONE 2,000
24 STORY 1,700
20 MARSHALL 2,400
18 TAMA 3,400
20 BENTON 14,600
18 LINN 25,400
15 JONES 16,300
19 JACKSON 25,180
20 CLINTON 42,000
20 HARRISON 7,600
21 SHELBY 5,700
24 AUDUBON 3,960
17 GUTHRIE 600
20 DALLAS 3,200
20 POLK 4,000
30 JASPER 14,400
17 POWESHIEK 7,600
20 IOWA 10,000
20 JOHNSON 40,000
26 CEDAR 20,800
17 SCOTT 52,700
18 MUSCATINE 49,700
18 POTTAWATTAMIE 16,700
17 CASS 5,610
12 ADAIR 4,440
18 MADISON 5,900
20 WARREN 8,600
23 MARION 9,200
16 MAHASKA 9,600
25 KEOKUK 37,500
23 WASHINGTON 13,100
18 LOUISA 37,800
20 MILLS 19,000
19 MONTGOMERY 10,400
30 ADAMS 7,200
19 UNION 3,800
12 CLARKE 1,560
15 LUCAS 2,000
14 MONROE 4,200
17 WAPELLO 22,300
16 JEFFERSON 6,700
20 HENRY 25,800
21 DES MOINES 37,700
21 FREMONT 16,800
21 PAGE 21,000
20 TAYLOR 12,000
18 RINGGOLD 9,400
16 DECATUR 11,520
16 WAYNE 10,200
18 APPANOOSE 18,000
19 DAVIS 13,680
18 VAN BUREN 21,000
20 LEE 94,000



POTATOES

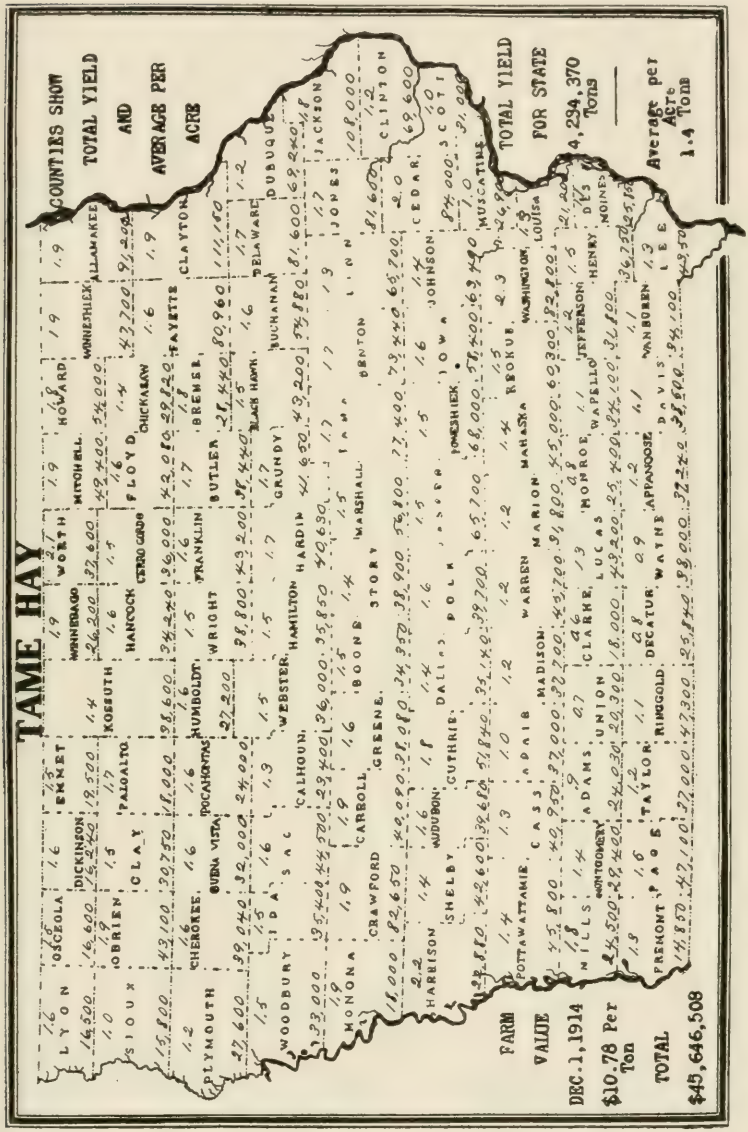
COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE

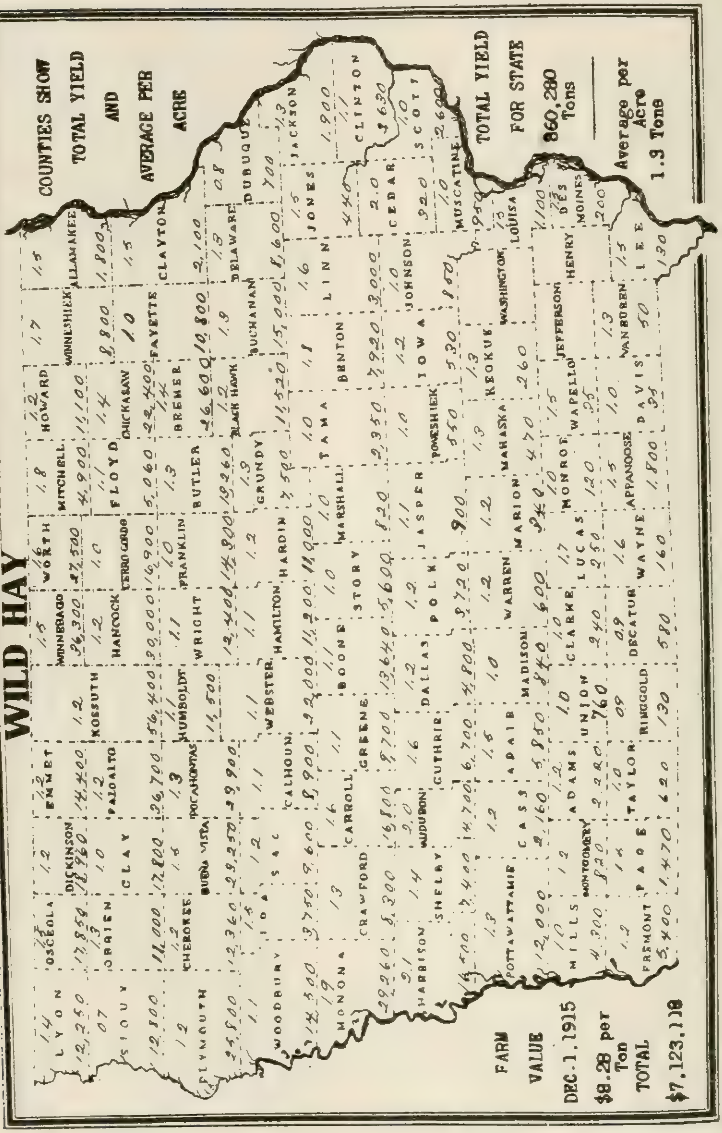
TOTAL YIELD FOR STATE 9,540,200 Bushels

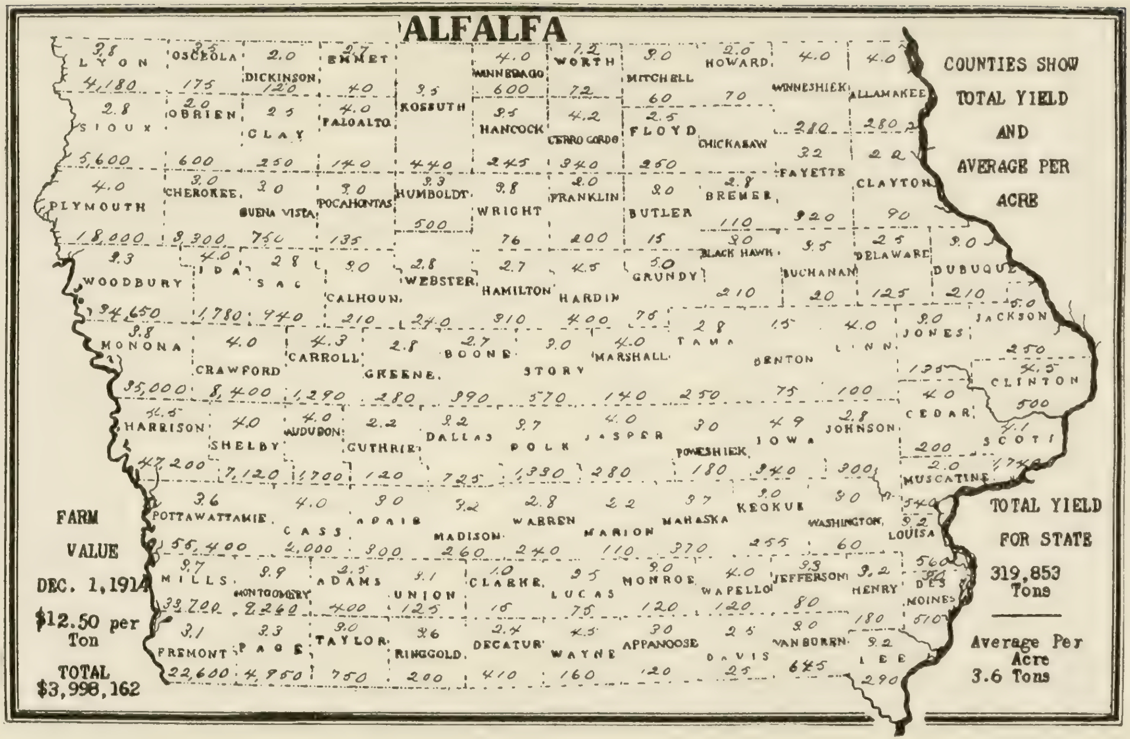
Average per Acre 87 Bushels

FARM VALUE DEC. 1, 1914 58c per bu. TOTAL $5,533,316

LYON
112
235,000
OSCEOLA
125
141,000
DICKINSON
76
13,750
EMMET
78
60,840
KOSSUTH
106
204,000
WINNEBAGO
127
149,000
WORTH
124
81,800
MITCHELL
122
329,000
HOWARD
86
90,300
WINNESHIEK
76
75,000
ALLAMAKEE
112
106,400
SIOUX
89
303,000
OBRIEN
90
387,000
CLAY
69
55,200
PALOALTO
67
52,900
HANCOCK
125
125,000
CERRO GORDO
117
152,100
FLOYD
94
150,400
CHICKASAW
73
109,500
FAYETTE
92
119,600
CLAYTON
100
160,000
PLYMOUTH
62
132,000
CHEROKEE
63
103,950
BUENA VISTA
105
147,000
POCAHONTAS
116
127,000
HUMBOLDT
101
46,460
WRIGHT
62
52,000
FRANKLIN
98
215,600
BUTLER
66
85,140
BREMER
84
96,600
BLACK HAWK
87
195,750
GRUNDY
88
211,200
BUCHANAN
78
54,600
DELAWARE
117
107,640
DUBUQUE
105
195,300
JACKSON
120
110,400
WOODBURY
71
110,000
IDA
74
74,260
SAC
81
81,000
CALHOUN
42
21,840
WEBSTER
50
41,000
HAMILTON
60
40,200
HARDIN
61
71,980
TAMA
144
240,000
BENTON
103
123,600
LINN
78
102,800
JONES
140
81,000
CLINTON
98
43,100
MONONA
82
68,900
CRAWFORD
64
118,400
CARROLL
107
235,400
GREENE
85
56,100
BOONE
61
67,100
STORY
68
26,500
MARSHALL
84
109,000
HARRISON
100
75,000
SHELBY
85
92,600
AUDUBON
105
78,750
GUTHRIE
54
30,780
DALLAS
60
24,000
POLK
53
98,500
JASPER
75
68,250
POWESHIEK
60
54000
IOWA
93
111,600
JOHNSON
97
92,000
CEDAR
101
101,000
SCOTT
87
500,00
MUSCATINE
83
217,00
POTTAWATTAMIE
82
108,000
CASS
77
80,850
ADAIR
64
67,840
MADISON
122
76,800
WARREN
82
32,800
MARION
72
36,000
MAHASKA
49
32,000
KEOKUK
88
50,000
WASHINGTON
50
22,500
LOUISA
78
22,000
MILLS
70
34,000
MONTGOMERY
65
31,000
ADAMS
45
18,900
UNION
66
99,000
CLARKE
63
13,540
LUCAS
27
11,900
MONROE
83
14,900
WAPELLO
62
35,300
JEFFERSON
85
33,900
HENRY
62
19,220
DES MOINES
143
117,260
FREMONT
76
45,000
PAGE
73
78,000
TAYLOR
66
23,000
RINGGOLD
61
11,600
DECATUR
32
3,200
WAYNE
70
13,300
APPANOOSE
75
15,000
DAVIS
47
15,000
VAN BUREN
46
11,000
LEE
69
73,400


TAME HAY
COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE
TOTAL YIELD FOR STATE 4,234,370 Tons
Average per Acre 1.4 Tons
FARM VALUE DEC. 1, 1914 $10.78 Per Ton
TOTAL $45,646,508
LYON
OSCEOLA
DICKINSON
EMMET
KOSSUTH
WINNEBAGO
WORTH
MITCHELL
HOWARD
WINNESHIEK
ALLAMAKEE
SIOUX
OBRIEN
CLAY
PALOALTO
HANCOCK
CERRO GORDO
FLOYD
CHICKASAW
FAYETTE
CLAYTON
PLYMOUTH
CHEROKEE
BUENA VISTA
POCAHONTAS
HUMBOLDT
WRIGHT
FRANKLIN
BUTLER
BREMER
BLACK HAWK
BUCHANAN
DELAWARE
DUBUQUE
WOODBURY
IDA
SAC
CALHOUN
WEBSTER
HAMILTON
HARDIN
GRUNDY
TAMA
BENTON
LINN
JONES
JACKSON
MONONA
CRAWFORD
CARROLL
GREENE
BOONE
STORY
MARSHALL
CLINTON
CEDAR
HARRISON
SHELBY
AUDUBON
GUTHRIE
DALLAS
POLK
JASPER
POWESHIEK
IOWA
JOHNSON
SCOTT
MUSCATINE
POTTAWATTAMIE
CASS
ADAIR
MADISON
WARREN
MARION
MAHASKA
KEOKUK
WASHINGTON
LOUISA
MILLS
MONTGOMERY
ADAMS
UNION
CLARKE
LUCAS
MONROE
WAPELLO
JEFFERSON
HENRY
DES MOINES
FREMONT
PAGE
TAYLOR
RINGGOLD
DECATUR
WAYNE
APPANOOSE
DAVIS
VANBUREN
LEE


WILD HAY
COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE
TOTAL YIELD FOR STATE 860,280 Tons
Average per Acre 1.3 Tons
FARM VALUE DEC. 1, 1915 $8.28 per Ton
TOTAL $7,123,118
LYON 1.4 12,250
OSCEOLA 1.3 17,850
DICKINSON 1.2 12,960
EMMET 1.2 14,400
KOSSUTH 1.2
WINNEBAGO 1.5 36,300
WORTH 1.6 27,500
MITCHELL 1.8 4,900
HOWARD 1.2 11,100
WINNESHIEK 1.7 8,800
ALLAMAKEE 1.5 1,800
SIOUX .07 12,800
OBRIEN 1.3 11,000
CLAY 1.0 17,800
PALOALTO 1.2 36,700
56,400
HANCOCK 1.2 30,000
CERRO GORDO 1.0 16,900
FLOYD 1.1 5,060
CHICKASAW 1.4 22,400
FAYETTE 1.0 10,800
CLAYTON 1.5 2,100
PLYMOUTH 1.2 24,500
CHEROKEE 1.2 12,360
BUENA VISTA 1.5 29,250
POCAHONTAS 1.3 19,900
HUMBOLDT 1.1 11,500
WRIGHT 1.1 12,400
FRANKLIN 1.0 14,900
BUTLER 1.3 19,260
BREMER 1.4 16,600
BLACK HAWK 1.2 11,520
BUCHANAN 1.9 15,000
DELAWARE 1.3 8,600
DUBUQUE 0.8 700
JACKSON 1.3 1,900
WOODBURY 1.1 14,300
IDA 1.5 3,750
SAC 1.2 9,600
CALHOUN 1.1 8,900
WEBSTER 1.1 22,000
HAMILTON 1.1 11,200
HARDIN 1.2 11,000
GRUNDY 1.3 7,500
TAMA 1.0
BENTON 1.1 7,920
LINN 1.6 3,000
JONES 1.5 440
CLINTON 1.1 3,630
MONONA 1.9 22,260
CRAWFORD 1.3 8,300
CARROLL 1.6 16,800
GREENE 1.1 8,700
BOONE 1.1 13,640
STORY 1.0 5,600
MARSHALL 1.0 2,350
CEDAR 2.0 920
SCOTT 1.0 2,600
HARRISON .91 14,400
SHELBY 1.4 3,400
AUDUBON 2.0 14,700
GUTHRIE 1.6 6,700
DALLAS 1.2 4,800
POLK 1.2 9,720
JASPER 1.1 900
POWESHIEK 1.0 550
IOWA 1.2 530
JOHNSON 1.0 860
MUSCATINE 1.0 950
POTTAWATTAMIE 1.3 12,000
CASS 1.2 2,160
ADAIR 1.6 5,850
MADISON 1.0 840
WARREN 1.2 600
MARION 1.2 940
MAHASKA 1.3 470
KEOKUK 1.3 260
WASHINGTON
LOUISA .75 1,100
MILLS 1.0 4,300
MONTGOMERY 1.2 820
ADAMS 1.2 2,220
UNION 1.0 760
CLARKE 1.0 240
LUCAS 1.7 250
MONROE 1.0 120
WAPELLO 1.5 35
JEFFERSON
HENRY
DES MOINES .75 200
FREMONT 1.2 5,400
PAGE 1.4 1,470
TAYLOR 1.0 620
RINGGOLD .09 130
DECATUR 0.9 580
WAYNE 1.6 160
APPANOOSE 1.5 1,800
DAVIS 1.0 35
VAN BUREN 1.3 50
LEE 1.5 130


ALFALFA
COUNTIES SHOW TOTAL YIELD AND AVERAGE PER ACRE
TOTAL YIELD FOR STATE
319,853 Tons
Average Per Acre
3.6 Tons
FARM VALUE
DEC. 1, 1914
$12.50 per Ton
TOTAL $3,998,162
3.8 LYON 4,180
3.5 OSCEOLA 175
2.0 DICKINSON 120
2.7 EMMET 40
3.5 KOSSUTH 440
4.0 WINNEBAGO 600
7.2 WORTH 72
3.0 MITCHELL 60
2.0 HOWARD 70
4.0 WINNESHIEK 210
4.0 ALLAMAKEE 280
2.8 SIOUX 5,600
2.0 OBRIEN 600
2.5 CLAY 250
4.0 PALOALTO 140
3.5 HANCOCK 245
4.2 CERRO GORDO 340
2.5 FLOYD 250
CHICKASAW
32 FAYETTE 920
2 2 CLAYTON 90
4.0 PLYMOUTH 18,000
3.0 CHEROKEE 3,300
3.0 BUENA VISTA 750
3.0 POCAHONTAS 135
3.3 HUMBOLDT 500
3.8 WRIGHT 76
2.0 FRANKLIN 200
3.0 BUTLER 15
2.8 BREMER 110
3.3 WOODBURY 94,650
4.0 IDA 1,780
2 8 SAC 440
3.0 CALHOUN 210
2.8 WEBSTER 240
2.7 HAMILTON 310
4.5 HARDIN 400
5.0 GRUNDY 76
3.0 BLACK HAWK 210
3.5 BUCHANAN 20
2 5 DELAWARE 125
3.0 DUBUQUE 210
5.0 JACKSON 250
3.8 MONONA 35,000
4.0 CRAWFORD 8,400
4.3 CARROLL 1,290
2.8 GREENE 280
2.7 BOONE 990
3.0 STORY 570
4.0 MARSHALL 140
2 8 TAMA 250
1.5 BENTON 75
4.0 LINN 100
3.0 JONES 135
4.5 CLINTON 500
4.5 HARRISON 47,200
4.0 SHELBY 7,120
4.0 AUDUBON 1,700
2.2 GUTHRIE 120
3.2 DALLAS 725
3.7 POLK 1,330
4.0 JASPER 280
3.0 POWESHIEK 180
4 9 IOWA 340
2.8 JOHNSON 300
4.0 CEDAR 200
4.1 SCOTT 1,740
2.0 MUSCATINE 540
3.6 POTTAWATTAMIE 56,400
4.0 CASS 2,000
3.0 ADAIR 300
3.2 MADISON 260
2.8 WARREN 240
2 2 MARION 110
3 7 MAHASKA 370
3.0 KEOKUK 255
3.0 WASHINGTON 60
3.2 LOUISA 560
3.7 MILLS 33,700
3.9 MONTGOMERY 2,260
2.5 ADAMS 400
3.1 UNION 125
1.0 CLARKE 16
3 5 LUCAS 75
3.0 MONROE 120
4.0 WAPELLO 120
3.3 JEFFERSON 80
3.2 HENRY 180
3.4 DES MOINES 510
3.1 FREMONT 22,600
3.3 PAGE 4,950
3.0 TAYLOR 750
3.6 RINGGOLD 200
2.4 DECATUR 410
4.5 WAYNE 160
3.0 APPANOOSE 120
2 5 DAVIS 25
3.0 VAN BUREN 645
3.2 LEE 290

REPORT ON FUNGUS DISEASES OF PLANTS FOR 1914.

By L. H. Pammel.

Climate plays an important role in the cause of fungus diseases of plants. The writer presented a brief account last year of the more important diseases of plants for 1912. These records have been kept for a series of years. From 1886 to 1889 notes were kept by Dr. Byron D. Halsted who was then the professor of Botany in Iowa State College. In 1892 the writer began a series of observations. These notes have been published from time to time. A summary was published by the writer and Miss Charlotte M. King in 1907. Since the publication of this paper notes have been published in report of the Iowa State Horticultural society.* For a number of years this work has been carried on with the co-operation of the Bureau of Plant Industry of the United States Department of Agriculture. I have also received much help from the volunteer observers of the Iowa Weather and Crop Service. To these and other correspondents who have assisted in this work the writer desires to express his thanks.

In the opening paragraph the statement was made that one of the important factors in disease is *climate*, meaning thereby rainfall, humidity and temperature; *soil* is another important factor; the *variety* is a third important factor. However, we cannot draw conclusions in regard to all of these factors until we have more data.

WEATHER DATA.

In order to show the climatic conditions for the growing season of 1914 I am giving the weather data for Decorah in northeastern Iowa, Keokuk in southeastern Iowa, Des Moines in central Iowa, Woodbury county in northwestern Iowa. This will give a fairly good idea of the weather for the past season. The season has been much drier than usual, especially during the growing season. The spring was drier than for several years past owing to a deficiency of snowfall and the fall rains of 1912. The yield of small grain crops was above the average in the state this year, while corn was below the larger yields of some years. The apple crop was small. Small fruits too were below the average.

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*Proc. Ia. Acad. Sci. 16:41.

WEATHER CONDITIONS AND TEMPERATURE.

Temperature and Precipitation—Decorah—

	April			May			June			July			August			September		
	Max.	Min.	Prec.	Max.	Min.	Prec.	Max.	Min.	Prec.	Max.	Min.	Prec.	Max.	Min.	Prec.	Max.	Min.	Prec.
1	46	39	----	70	43	----	78	53	----	80	57	----	86	56	----	83	55	.40
2	53	36	----	69	46	----	79	48	----	84	54	----	88	73	----	72	43	----
3	42	31	----	70	54	.13	90	60	.55	90	56	.72	85	59	----	68	44	----
4	38	29	.10	81	50	----	83	68	----	88	62	.08	90	54	----	79	41	T
5	51	21	----	78	52	----	68	58	.70	91	65	----	86	62	----	86	53	T
6	48	35	----	67	43	----	87	62	.92	91	67	----	87	58	----	79	50	----
7	41	29	----	58	42	T	87	69	----	81	70	----	87	53	----	61	46	----
8	30	19	----	68	40	----	90	68	----	84	61	----	94	64	----	68	47	----
9	47	23	.23	76	39	----	88	70	T	92	59	----	95	69	----	65	40	.18
10	51	33	----	81	55	----	88	60	T	95	64	----	85	60	.45	69	53	----
11	43	24	----	69	41	1.60	80	60	.85	99	69	----	78	50	----	73	53	----
12	67	32	----	62	38	----	75	65	.18	95	75	.18	87	56	----	72	45	----
13	70	33	----	63	42	----	68	59	1.00	85	69	----	82	43	----	62	53	1.57
14	76	35	----	63	36	----	60	59	T	85	68	----	90	44	----	71	61	1.00
15	77	37	----	68	33	----	75	60	----	92	62	----	89	60	----	82	49	----
16	82	39	----	70	32	----	72	45	----	86	67	.40	94	64	.81	80	62	.95
17	82	54	----	75	42	----	76	42	----	78	56	----	92	69	.15	80	64	----
18	75	50	.40	78	64	----	78	58	.35	82	49	----	85	66	----	82	62	----
19	54	32	----	78	56	----	78	53	.54	83	63	----	80	64	.57	86	63	----
20	62	35	----	73	64	.31	69	48	T	92	53	----	86	54	.18	85	60	----
21	63	40	----	75	63	.35	90	64	.72	93	61	----	84	57	----	84	67	----
22	67	50	----	70	51	----	89	63	----	94	58	----	82	67	.60	68	44	----
23	64	43	----	70	50	.05	80	64	----	91	71	----	76	54	.25	69	35	.78
24	73	54	1.02	82	55	3.28	90	63	.12	86	68	1.15	79	48	----	68	46	T
25	73	55	----	86	60	----	89	67	----	92	62	----	76	47	----	67	34	----
26	86	46	----	91	61	----	92	65	.29	95	65	----	67	51	----	72	34	----
27	83	59	.81	86	65	----	76	63	.08	96	67	.45	60	53	----	78	42	----
28	71	55	.82	88	68	----	69	53	----	81	65	----	83	46	.08	79	50	----
29	61	43	----	80	58	----	77	50	----	81	52	----	87	63	----	80	52	----
30	51	41	----	79	45	----	78	57	T	78	53	----	88	62	----	78	47	----
31	----	----	----	81	52	.10	----	----	----	79	55	----	----	----	----	----	----	----
Totals	----	----	3.38	----	----	5.72	----	----	6.30	----	----	2.98	----	----	3.09	----	----	5.48

Temperature and Precipitation—Keokuk—

1	52	46	.26	62	41	----	81	65	.39	83	64	.01	88	69	----	86	67	1.88
2	61	40	----	67	47	----	78	55	----	87	62	----	93	71	.42	74	58	----
3	43	32	----	78	56	.07	91	63	.03	89	65	----	88	64	----	81	57	----
4	44	32	----	76	61	.14	95	74	----	90	72	----	89	65	----	78	55	----
5	51	32	----	81	57	----	91	69	----	94	60	----	92	65	.06	84	61	.14
6	52	41	.67	68	48	T	93	74	----	92	71	----	90	65	.30	85	68	----
7	44	31	----	60	46	.13	95	74	----	92	72	.02	93	66	----	70	59	.35
8	34	26	T	62	42	----	94	74	----	92	72	----	95	72	----	65	55	----
9	44	25	----	72	44	.49	97	77	.19	96	68	----	90	74	T	64	52	T
10	55	34	.01	82	62	----	93	75	----	98	72	----	81	70	T	60	55	1.76
11	46	34	----	83	50	.42	92	68	T	102	74	----	84	64	----	67	55	----
12	60	31	----	50	40	.03	86	71	----	96	74	.13	92	62	----	71	54	----
13	62	37	----	62	46	----	80	64	1.93	89	75	----	93	74	T	80	57	.04
14	68	42	----	69	44	----	82	63	.10	87	70	----	84	60	----	84	67	1.47
15	70	45	----	68	46	----	74	63	T	94	69	----	92	61	----	78	63	----
16	81	49	----	70	46	----	70	53	----	98	72	1.05	95	74	T	84	66	.09
17	82	58	----	74	50	----	77	53	----	85	69	.01	95	75	----	84	67	.32
18	70	48	.10	78	51	----	86	61	T	79	59	----	97	77	----	83	61	----
19	48	35	----	81	59	----	83	57	----	89	60	----	93	70	.55	86	66	----
20	58	32	----	81	57	----	88	49	----	90	65	----	89	67	----	85	70	----
21	83	48	----	82	63	.02	96	77	----	82	70	.23	89	70	----	88	71	----
22	80	52	----	77	58	----	89	73	.65	95	70	----	92	67	----	74	50	.17
23	67	48	0.1	83	57	----	95	73	.02	101	79	----	93	70	.15	71	44	----
24	80	60	T	86	69	----	98	75	T	98	76	----	71	65	----	70	54	----
25	79	60	----	89	72	----	94	72	----	95	76	T	82	59	----	66	47	----
26	85	50	.23	91	74	----	100	78	----	98	73	----	82	63	----	72	47	----
27	79	64	----	96	73	.03	88	67	.01	100	75	.38	80	61	----	76	52	----
28	69	50	.66	89	71	.01	74	58	----	93	72	----	71	59	.42	78	55	----
29	55	46	----	77	63	.39	80	56	----	85	62	----	80	59	----	79	55	----
30	51	44	----	80	59	----	78	59	.01	87	59	.24	88	65	.05	81	55	----
31	----	----	----	89	62	----	----	----	----	85	63	.02	87	60	.66	----	----	----
Totals	----	----	1.94	----	----	1.73	----	----	3.33	----	----	2.09	----	----	2.61	----	----	6.22

WEATHER CONDITIONS AND TEMPERATURE.

Temperature and Precipitation—Des Moines—

	April			May			June			July			August			September		
	Max.	Min.	Prec.	Max.	Min.	Prec.	Max.	Min.	Prec.	Max.	Min.	Prec.	Max.	Min.	Prec.	Max.	Min.	Prec.
1	52	43	----	63	45	----	80	59	----	82	61	----	85	65	----	75	57	T
2	54	36	----	43	68	T	76	57	T	87	60	----	91	70	----	75	50	----
3	40	31	----	75	56	.02	90	62	----	87	66	----	89	67	----	82	53	----
4	40	30	T	78	55	.40	95	74	----	89	66	----	92	66	.25	77	48	T
5	46	32	.01	73	52	----	90	64	.22	93	69	----	82	66	----	96	63	.16
6	48	36	.23	66	43	.03	91	65	.10	84	70	.05	89	64	----	86	65	----
7	39	29	T	55	44	.07	92	76	----	85	71	----	94	63	----	65	57	.78
8	37	25	T	64	41	----	92	75	----	88	63	----	97	72	----	61	53	T
9	46	23	----	74	45	T	91	72	T	93	68	----	94	60	----	68	53	.23
10	55	36	.01	86	59	1.27	90	65	.02	97	71	----	80	64	T	63	51	1.81
11	46	29	----	75	41	1.31	79	64	.22	98	76	----	79	59	.02	69	54	T
12	64	31	----	52	38	.01	87	70	----	101	78	T	92	60	----	71	56	----
13	65	38	----	62	42	----	73	64	.83	85	71	----	86	66	----	71	52	3.78
14	70	39	----	70	43	----	82	60	1.04	84	68	----	80	52	T	76	57	1.56
15	75	44	T	71	44	----	76	62	----	94	68	----	94	58	----	76	57	----
16	82	45	----	71	48	----	70	55	----	87	68	.51	98	76	----	82	53	4.87
17	81	60	----	75	40	----	76	52	T	86	60	----	98	70	----	83	66	T
18	76	40	.38	78	50	----	88	62	----	78	56	----	98	80	----	85	67	----
19	40	33	.16	73	57	.01	73	60	----	89	60	----	88	70	.04	82	66	----
20	60	32	----	79	62	.03	90	52	----	88	66	----	91	66	----	85	63	T
21	80	52	----	79	59	----	92	77	.02	90	67	.07	88	69	----	82	68	1.59
22	71	52	----	78	53	1.58	90	72	----	98	71	T	96	68	----	82	60	----
23	60	46	.09	78	59	----	95	69	----	96	73	----	86	65	.12	64	49	.03
24	74	59	.02	87	62	----	95	70	.18	88	75	----	79	58	----	75	47	----
25	78	52	----	90	70	.04	85	64	1.24	93	70	----	84	59	T	71	52	----
26	84	57	.28	92	69	----	94	74	.02	96	71	----	72	56	----	66	47	----
27	77	59	.29	89	71	----	78	63	----	100	71	----	72	56	.03	71	47	----
28	63	46	.07	85	69	T	70	58	T	92	72	----	73	57	.32	76	52	----
29	52	44	----	73	58	.06	78	54	----	86	63	----	82	54	----	77	53	----
30	49	42	----	84	49	----	74	60	T	80	62	.59	87	66	----	79	55	----
31	----	----	----	90	69	----	----	----	----	82	61	----	86	65	.99	81	55	----
Totals	----	----	1.52	----	----	4.83	----	----	3.89	----	----	1.22	----	----	1.77	----	----	14.81

Temperature and Precipitation—Sioux Center—April, May and June, and Sioux City, July, August and September—

1	55	39	----	62	40	----	80	50	----	82	58	----	81	68	----	71	54	T
2	50	30	----	64	51	T	71	60	.43	86	57	----	87	69	.03	75	47	----
3	45	29	----	74	55	.42	88	66	----	84	63	T	80	62	----	78	50	----
4	43	26	.30	84	49	----	92	69	.22	91	60	----	89	66	.47	77	44	----
5	47	31	.02	80	51	----	88	63	.63	89	71	----	87	66	.46	88	62	----
6	50	36	.05	65	35	----	88	61	1.28	86	71	.18	87	62	.02	82	56	T
7	39	27	T	61	41	.05	85	73	----	84	64	----	95	69	----	65	55	.52
8	41	18	----	67	35	----	85	72	T	87	58	----	96	74	----	63	54	----
9	50	17	----	81	46	----	86	62	.48	96	66	----	91	64	----	50	54	1.60
10	56	35	T	88	50	T	80	60	.92	95	67	----	78	54	----	69	56	----
11	50	18	----	83	41	.20	86	63	.27	99	75	----	73	53	.01	74	51	----
12	69	27	----	56	34	----	85	63	----	96	72	----	88	57	.43	60	55	T
13	73	40	----	63	31	----	85	66	.02	86	67	----	88	64	T	68	52	.38
14	73	41	----	70	32	----	84	63	----	91	65	----	81	57	T	67	51	.58
15	79	37	----	75	44	----	79	64	----	92	70	----	93	62	----	78	52	----
16	88	37	----	75	46	----	75	55	----	87	65	----	96	73	.04	80	62	----
17	86	33	----	77	49	----	79	55	.36	83	58	----	100	74	----	80	57	----
18	82	44	T	80	57	----	89	56	----	86	58	----	96	76	T	85	66	----
19	58	32	T	75	60	.03	87	57	----	90	63	----	81	66	T	83	60	----
20	70	29	----	77	60	1.05	90	59	T	85	66	----	83	65	.04	79	65	----
21	80	47	----	76	61	----	94	68	----	93	69	----	88	64	----	73	50	.23
22	79	48	----	78	52	----	87	67	.16	81	69	T	100	74	----	65	43	----
23	76	55	----	86	62	.73	92	62	----	90	65	----	84	50	----	78	51	----
24	73	53	1.25	89	62	.87	87	65	.42	90	70	----	77	54	----	72	47	----
25	81	47	----	92	70	----	93	63	----	94	72	----	68	54	.03	73	44	----
26	82	51	.90	92	63	----	92	64	.87	97	74	----	67	52	.01	76	50	----
27	75	56	.72	88	64	----	85	60	----	97	76	.45	62	54	.20	81	53	----
28	61	38	----	81	68	.18	74	55	----	92	71	----	74	50	----	82	56	----
29	53	37	----	77	53	.32	82	53	----	80	69	----	83	50	----	79	53	----
30	57	38	----	79	47	----	77	62	.12	76	63	.85	87	60	----	82	51	----
31	----	----	----	87	63	----	----	----	----	81	62	----	92	69	----	----	----	----
Totals	----	----	3.24	----	----	3.85	----	----	6.18	----	----	1.48	----	----	1.74	----	----	3.31

CEREAL DISEASES.

Rust of wheat (*Puccinia graminis* and *P. rubigo-vera*) was commonly observed but not as destructive as during the wet years. A few seasonable rains for infection occurred in some parts of the state. Late sown grain suffered more severely than the early. In an experimental plat sown very late the rust was so severe that the plants did not head out. There was also some rust (*Puccinia graminis*) on the stems of oats and leaf of oats (*P. coronata*) L. With us in Iowa, rye is quite as severely rusted as wheat and that with *Puccinia rubigo-vera*. The yellow leaf disease of the barley (*Helminthosporium gramineum*) and leaf spot (*H. sativum*) were serious, in some cases materially reducing the yield of barley. In Story county the former damaged the crop to the extent of 4-15 per cent, while the latter occurred on from 50 to 60 per cent of the leaves. It probably reduced the yield of barley 25 per cent in the State. Of the barley smut the naked smut (*Ustilago nuda*) was most common. The damage was probably not far from 22 per cent. For the first time ergot (*Claviceps purpurea*) was common on barley. Oat smut (*Ustilago aveneae*) was common and the damage has been estimated at $7,000,000 this year. Too few of the farmers treat their seed with formalin to prevent the disease. No wheat bunt was observed. There was, however, an abundance of wheat smut which damaged the crop to the extent of 2 per cent. A bacterial disease of oats was observed in Clinton county. The young oat leaves turned yellowish brown.

DISEASES OF CORN.

Corn is the most important crop in Iowa. The usual amount of smut (*Ustilago Zeae*) was observed, about one per cent; some rust (*Puccinia Sorghi*), however not as severe as in 1912. An unusual and widespread disease of corn caused by fungus *Fusarium* appeared in nearly every part of Iowa. In some cases the loss from this fungus was 50 per cent, in other cases 6-15. The yield for the whole state was materially reduced. In this disease the roots were diseased, having a pinkish color,the wind blew over the corn, many such stalks were barren. In other cases the fungus attacked the stem, destroying the pith and causing the corn to fall over, usually breaking close to the joint. The damage caused by this fungus has been estimated at nearly $25,000,000. The disease was not local but quite general in the state. It is probable that the lack of moisture checked the development of roots and thus materially injured the corn when attacked by the fungus. There was also much complaint about ear rots. These have not been connected with root or stem disease. While the moist weather of September may have contributed somewhat to the abundance of this mould (*Fusarium*), it is a true parasite.

POME FRUIT DISEASES.

The apple crop was so small this year that not much need to be said about pome diseases. There was in some sections of the state a little apple scab on the fruit, but more abundant on the leaves especially such varieties as Fameuse. Illinois or Blister canker (*Nummularia discreta*) was abundant in southwestern Iowa. Apple blight was severe only on the Transcendent crab apple, then only in June. No infection occurring later. Some bitter rot of the apple was reported from western Iowa.

DISEASES OF SMALL FRUIT.

Blackberries in some places were infected with the Red rust (*Caeoma nitens* or *Gymnocomia Peckiana*). Such infection can be traced to old diseased plants. There was also some spot of the blackberry (*Septoria Rubi*). The strawberry blight (*Mycosphaerella Fragariae*) was not abundant. Here and there we noted some crown gall on blackberry (*Pseudomonas tumefaciens*). Some gooseberry mildew (*Sphaerotheca mors-uvae*) in northern Iowa on cultivated gooseberries. In a few cases the spot disease of currants (*Gloeosporium Ribis* and *Cercospora angulata*) were abundant only however locally.

STONE FRUITS.

The Brown rot of plum (*Sclerotinia fructigeana*) was not common only in late plums. Plum scab (*Cladosporium carpophilum*) was rare. On the other hand this fungus was common on the peach in southeastern Iowa. Mildew on the cherry, though occurring, was less abundant than in previous years, 1912 and 1913. The spot disease of the cherry (*Cylindrosporium padi*) was rare, except late in the season. Plum pocket (*Exoascus Pruni*) was rare, enlarged branches (*Exoascus communis*) were common in a few places on the Miner plum.

DISEASES OF THE GRAPE.

There was little of the Powdery Mildew (*Uncinula necator*) anywhere in the state. In western Iowa in the vicinity of Council Bluffs there was some Downy Mildew (*Plasmopara viticola*) on the Concord grape. No Black rot or Bird's Eye fungus was observed.

DISEASES OF ORNAMENTAL PLANTS.

There was much mildew (*Sphaerotheca pannosa*) on the Crimson Rambler rose. There was some mildew on the lilac later in the season. China asters in one part of the state were attacked by a species of Fusarium and in a Des Moines greenhouse the snap dragon rust (*Puccinia antirrhinii*) was reported.

DISEASES OF ROOT CROPS.

Potato scab (*Oospora Scabies*) was reported from numerous points in the state especially severe on the early Ohio. After an investigation of the Powdery Scab in the state it may be stated that it has not been reported to us. The Fusarium disease of the potato is quite widely scattered in Iowa. In some cases beet scab was reported and onion smut was reported from Scott county.

DISEASES OF VEGETABLES.

Asparagus rust occurred in usual amounts in many parts of Iowa. There was some Fusarium rot of cucumbers in greenhouses and in the field. During the fall rains, tomatoes were badly attacked by Fusarium.

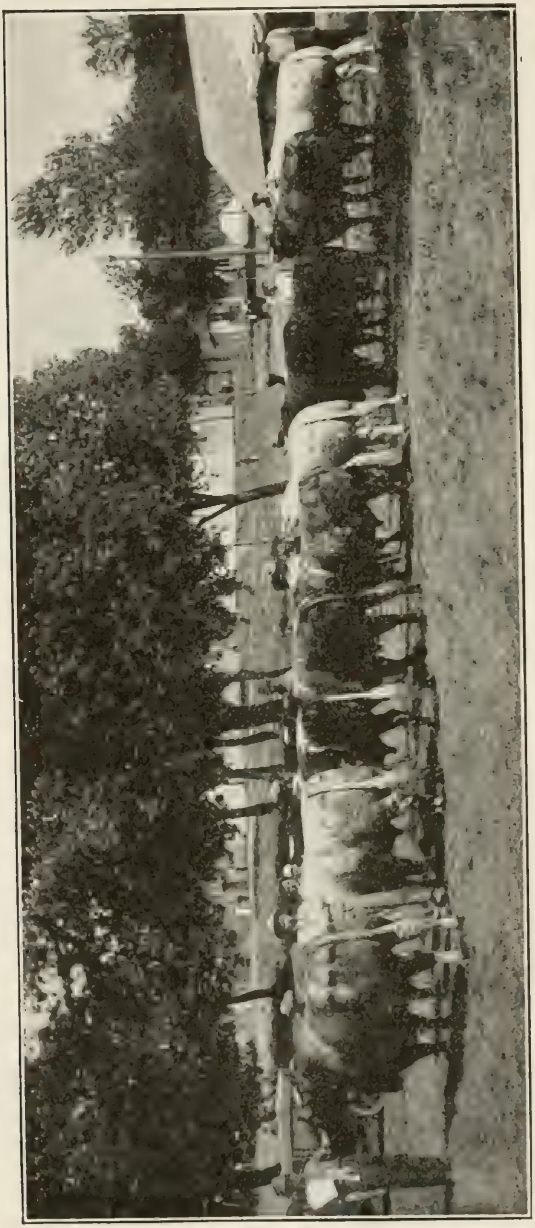
A few reported cases of Bean anthracnose and beet spot (*Cercospora beticola*). Melon wilt reported from Muscatine county. Cabbage yellows (*Fusarium*) serious near Muscatine.

DISEASES OF FORAGE CROPS.

Alfalfa mildew (*Peronospora Trifoliorum*) reported for the first time from Allamakee county by Mr. O. Schultz and the alfalfa root rot (*Rhizoctonia violacea*) from Scott county by Prof. G. R. Bliss and Mr. Lau, also for the first time. Clover rust was abundant during September, also the alfalfa rust. There was much silver top in Eastern Iowa, in some cases 50 per cent of the blue grass heads were killed.

FOREST TREE DISEASES.

Buckeye was seriously attacked by a spot disease (*Phyllosticta aesculi*). So severe was it in Boone county that many trees were defoliated in May. There was less of the Black spot of the Maple (*Rhytisma acerinum*) than usual. There was as usual some of the Sycamore blight (*Gloeosporium nervisequum*) but less than in 1913. Many shade trees suffered because of the dry weather; this was particularly true of the American or white elm.



Magnificent Showing of Aged Bulls at the 1914 Iowa State Fair and Exposition.

PART XII

Statistical Tables of Iowa's Principal Farm Crops, Also Principal Tables on Farm Crops of the United States and Live Stock by States

CORN CROPS—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1880	41	230,633,200	$ .25	$ 57,658,300	5,625,200
1885	33	224,636,522	.23	51,666,400	6,803,834
1890	28	239,675,156	.41	98,266,814	8,550,827

CORN CROPS—1896-1914.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1896	39	312,692,210	$ .14	$ 43,916,900	8,043,390
1897	29	239,452,150	.17	40,706,860	8,253,522
1898	34.5	289,214,850	.23	66,519,400	8,396,286
1899	36.3	306,852,710	.23	70,429,410	8,460,521
1900	40.3	345,055,040	.27	93,164,860	8,618,660
1901	26.2	227,908,850	.50	113,954,000	8,687,480
1902	34	296,950,230	.28	82,432,700	8,700,000
1903	31	230,511,310	.36	82,984,071	7,398,320
1904	36	323,853,330	.35	113,348,665	9,000,000
1905	37.2	345,871,840	.35	121,055,144	9,285,150
1906	41	388,836,252	.33	128,155,143	9,443,960
1907	29.6	246,898,460	.44	108,635,322	8,858,000
1908	35.9	301,873,150	.51	153,955,306	8,399,610
1909	34.6	308,036,868	.51	157,098,802	8,681,850
1910	39.8	334,374,428	.36	120,374,794	8,399,712
1911	32.9	281,366,600	.54	151,937,964	8,534,500
1912	46.8	421,368,400	.36	151,698,624	9,199,610
1913	34.9	329,343,000	.59	194,311,370	9,434,500
1914	39	363,689,600	.55	200,029,280	9,324,300
Average 19 years	35.6	310,218,383	$ .37.2	$ 115,510,979	8,690,493

OATS—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1880	35	42,288,800	$ .23	$ 9,496,424	1,179,680
1885	32.5	71,737,900	.21	15,064,959	2,207,320
1890	29	80,002.735	.38	30,401,039	2,758,715

OATS—1896-1914.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1896	26	73,450,000	$ .12	$ 8,814,000	2,825,000
1897	30	132,517,150	.16	21,211,380	4,405,782
1898	32	139,915,340	.21	29,383,220	4,299,243
1899	34.5	140,647,300	.19	26,722,980	4,069,557
1900	35	138,832,300	.20	27,766,460	3,991,690
*1901	32	114,883,000	.35	40,209,230	3,799,220
1902	31	92,907,900	.24	22,297,000	3,770,624
†1903	25.9	99,012,660	.30	29,703,798	3,822,822
1904	29.4	118,435,570	.26	30,793,284	4,018,980
1905	33.8	146,439,240	.25	36,609,810	4,177,545
1906	34	142,036,530	.27	38,349,878	4,166,800
1907	24.5	111,190,400	.39	43,364,256	4,536,170
1908	25.5	112,830,490	.43	48,517,110	4,431,650
1909	27	117,083,850	.35	40,979,348	4,312,134
1910	36	169,207,008	.27	45,685,916	4,697,749
1911	25.7	120,218,300	.41	59,285,403	4,660,500
1912	44.4	206,949,700	.27	55,876,419	4,665,100
1913	34.2	164,851,000	.34	56,049,340	4,824,400
1914	34	172,696,000	.41	70,805,360	5,154,200
Average 19 years	31.2	132,320,727	$ .28	$ 38,548,641	$ 4,243,640

*Short corn crop.
†Excessive moisture.

WHEAT—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre spring wheat	Average yield per acre winter wheat	Total yield spring wheat	Total yield winter wheat	Total yield all wheat	Average farm price Dec. 1st	Total farm value December 1st	Acreage
1880 ----------	10.5	-----	------------	------------	36,099,760	$.82	$ 29,501,803	3,437,948
1885 ----------	12	-----	------------	------------	31,776,108	.61	19,383,426	2,648,009
1890 ----------	11.7	-----	------------	------------	25,114,552	.78	19,589,350	2,092,896

WHEAT—1896-1914.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre spring wheat	Average yield per acre winter wheat	Total yield spring wheat	Total yield winter wheat	Total yield all wheat	Average farm price Dec. 1st	Total farm value December 1st	Acreage
1896 ----------	13	17	7,047,235	3,351,550	10,398,785	$.57	$ 6,020,000	739,215
1897 ----------	13.4	13	12,941,600	1,671,454	14,613,054	.74	10,813,650	1,222,974
1898 ----------	14.8	16.5	19,152,352	3,168,916	22,321,268	.53	11,602,000	1,484,682
1899 ----------	12.7	11	19,574,792	226,040	19,900,830	.58	10,701,490	1,559,931
1900 ----------	14.3	13.3	20,280,280	1,018,070	21,288,350	.60	12,799,370	1,492,600
1901 ----------	15.3	17.6	17,429,230	865,770	18,295,000	.60	10,965,000	1,188,239
1902 ----------	13	18	12,680,800	825,045	13,532,845	.53	7,062,640	1,021,281
1903 ----------	12.6	16.9	9,481,350	1,435,380	10,916,730	.67	7,167,643	837,422
1904 ----------	9.1	14.3	7,080,430	1,017,000	8,097,430	.89	7,044,809	846,070
1905 ----------	14.4	20.2	5,155,760	1,253,020	6,408,780	.72	4,614,321	420.068
1906 ----------	15	23	5,603,880	1,566,050	7,169,930	.64	4,579,697	443,810
1907 ----------	13	19.8	4,402,320	1,698,101	6,100,421	.82	4,974,302	424,407
1908 ----------	15.4	19.7	4,968,250	1,678,540	6,646,790	.86	5,716,239	408,614
1909 ----------	12.5	18.2	3,809,460	3,621,953	7,431,413	.90	6,688,272	502,762
1910 ----------	19.3	18.5	6,773,799	3,635,405	10,409,204	.86	8,951,915	546,179
1911 ----------	13.1	19.7	4,674,500	3,959,000	8,633,500	.89	7,683,715	559,272
1912 ----------	18.7	24.3	9,486,700	8,133,530	17,620,230	.77	13,554,135	840,360
1913 ----------	15.1	23.1	5,510,200	11,693,900	17,204,100	.77	13,136,953	871,040
1914 ----------	13	22	3,389,070	12,038,210	15,427,280	.95	14,862,788	799,435
Av. 19 yrs.	14	18.2	9,444,313	3,308,259	12,758,734	$.73	$ 8,891,523	853,073

BARLEY—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1880	23	4,600,000	$ .42	$ 1,932,000	200,000
1885	27	5,737,095	.33	1,893,241	212,485
1890	24	3,664,368	.47	1,722,254	152,682

BARLEY—1896-1914.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1896	29	15,881,618	$ .20	$ 3,176,320	547,642
1897	25	14,076,850	.23	3,237,670	551,867
1898	27.5	14,138,000	.30	4,209,740	509,580
1899	25.6	14,719,310	.30	4,415,570	557,598
1900	25.3	12,695,200	.33	4,189,410	501,740
1901	24.2	14,654,410	.44	6,447,940	604,610
1902	25	15,380,910	.33	5,075,710	594,070
1903	24.7	12,179,790	.37	4,506,522	493,108
1904	25	12,317,710	.34	4,188,021	493,370
1905	27.5	15,566,770	.33	5,137,034	565,700
1906	26.5	14,858,830	.36	5,349,178	558,870
1907	24.6	9,893,330	.60	5,935,998	397,210
1908	26.7	10,629,660	.50	5,314,830	307,408
1909	17.5	10,352,040	.46	4,761,938	562,622
1910	25.9	8,614,541	.56	4,824,143	324,571
1911	22.9	7,197,090	.90	6,447,381	313,147
1912	32.5	9,587,760	.50	4,793,880	294,935
1913	23.8	8,756,300	.53	4,640,839	368,600
1914	26	11,423,310	.56	5,397,053	437,400
Average 19 years	25.5	12,259,127	$ .42.8	$ 4,835,219	472,844

RYE—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1880	14	574,000	$ .38	$ 218,120	41,000
1885	15	1,710,000	.42	718,200	114,000
1890	16	1,608,960	.51	820,570	100,560

RYE—1896-1914.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1896	16	1,891,716	$ .25	$ 486,680	121,670
1897	15	3,490,344	.34	1,186,710	226,198
1898	16	3,370,550	.38	1,280,800	210,309
1899	16.3	2,061,160	.40	824,460	126,236
1900	15.6	1,621,130	.43	697,300	103,680
1901	15.8	859,630	.48	859,630	54,390
1902	17	882,830	.40	353,132	55,150
1903	15.6	1,923,060	.44	846,146	123,273
1904	15	1,517,090	.54	819,228	99,500
1905	18	1,283,500	.52	667,420	71,305
1906	17.5	1,093,160	.48	520,719	62,530
1907	17	900,060	.61	549,036	52,975
1908	17.1	869,072	.63	547,515	50,893
1909	13.4	556,846	.60	334,107	41,606
1910	13.8	407,058	.61	248,305	29,502
1911	16.8	486,130	.79	384,043	28,710
1912	20.7	888,530	.61	542,003	42,970
1913	18.3	1,274,500	.59	751,955	69,830
1914	19	1,369,260	.77	1,054,320	73,150
Average 19 years	16.5	1,407,661	$ .51	$ 681,763	86,519

HAY—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield tame hay	Total yield—tons	Average yield wild hay	Total yield—tons	Total yield all hay—tons	Average value per ton—tame hay	Average value per ton—wild hay	Total value—all hay	Acreage
*1880 ----	------	------------	------	------------	------------	------	------	------------	----------
*1885 ----	------	------------	------	------------	------------	------	------	------------	----------
1890 ----	1.5	4,991,335	------	------------	------------	$ 6.84	-------	$34,140,731	3,327,557

*No authentic data obtainable.

HAY—1896-1914.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield tame hay	Total yield—tons	Average yield wild hay	Total yield—tons	Total yield all hay—tons	Average value per ton—tame hay	Average value per ton—wild hay	Total value—all hay	Acreage
1896 -----	1.5	3,376,440	1.5	2,325,000	5,701,440	$ 4.50	$ 3.30	$22,782,000	3,800,960
1897 -----	1.6	3,362,287	1.3	1,939,117	5,301,320	4.50	3.70	22,304,000	3,315,972
1898 -----	1.7	3,852,561	1.2	1,645,419	5,498,080	4.30	3.50	22,281,000	4,104,967
1899 -----	1.5	4,852,941	1.2	1,458,195	5,311,130	5.75	4.90	29,350,000	3,742,655
1900 -----	1.4	3,609,010	1	1,530,050	5,139,060	6.50	5.00	31,120,000	4,078,960
1901 -----	1.4	3,711,680	1.2	1,268,700	4,980,380	8.25	6.30	38,712,000	3,608,450
1902 -----	1.8	4,439,040	1.3	1,202,860	5,641,900	6.80	5.50	36,787,322	3,391,408
1903 -----	1.9	5,216,404	1.3	1,191,345	6,407,749	5.75	4.95	35,891,480	3,651,894
1904 -----	1.5	4,499,090	1.2	1,091,590	5,590,680	5.62	4.50	30,197,040	3,707,298
1905 -----	1.8	6,477,300	1.2	1,313,310	7,790,610	5.50	4.50	41,535,045	4,692,925
1906 -----	1.3	4,892,950	1.2	1,110,690	6,003,640	7.50	5.50	42,805,920	4,418,600
1907 -----	1.5	5,117,878	1.3	1,172,590	6,290,468	8.50	6.75	51,316,945	4,268,730
1908 -----	1.8	5,838,640	1.6	1,445,989	7,284,620	6.16	5.09	43,326,060	4,146,870
1909 -----	1.7	5,828,580	1.4	1,219,630	7,048,210	7.42	5.90	50,443,781	4,299,740
1910 -----	1.1	3,876,844	1.1	807,280	4,684,124	10.15	8.00	45,808,207	4,367,725
1911 -----	0.8	3,246,200	0.9	683,385	3,929,585	13.44	10.28	50,653,116	4,214,540
1912 -----	1.6	4,287,600	1.4	1,085,440	5,373,040	9.89	7.43	50,469,183	3,682,359
1913 -----	1.5	4,010,300	1.3	910,205	4,920,505	9.93	8.80	47,832,083	3,359,365
1914 -----	1.4	4,234,370	1.3	860,280	5,094,650	10.78	8.28	52,769,626	3,607,320
Av. 19 years--	1.5	4,459,479	1.2	1,276,898	5,683,747	$ 7.43	$ 5.90	$39,283,411	3,918,986

FLAX—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1880	10	1,034,200	$ 1.00	$ 1,034,200	103,420
*1885			.94	2,503,293	
1890	10.5	2,929,081	1.10	3,276,989	283,722

*No other data.

FLAX—1896-1914.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1896	9.5	1,946,720	$ .95	$ 1,135,000	199,128
1897	10	2,498,600	.87	2,173,782	249,882
1898	10.5	2,376,600	.80	1,901,280	225,014
1899	11.2	1,597,790	1.04	1,661,898	142,175
1900	11.7	1,222,980	1.50	1,834,470	108,850
1901	18.8	916,890	1.29	916,890	104,140
1902	8	755,350	1.00	725,350	94,767
1903	8.7	355,160	.78	277,024	40,823
1904	11	591,140	1.15	679,811	51,370
1905	9.8	173,770	.90	156,393	17,732
1906	10.7	205,280	.97	200,091	19,160
1907	10.8	461,960	.98	408,640	42,790
1908	11.3	461,580	1.01	466,195	40,833
1909	10	173,650	1.29	223,647	17,365
1910	8.6	170,387	2.28	388,482	19,821
1911	8.5	173,710	2.00	347,420	20,205
1912	11.3	423,060	1.31	554,208	37,305
1913	10	223,490	1.36	303,946	22,255
1914	11	152,280	1.21	184,258	14,440
Average 19 years	10.2	783,170	$ 1.24	$ 711,436	77,260

POTATOES—1880, 1885, 1890.

Statistics Compiled from Reports of Secretary of Iowa Agricultural Society.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1880	95	10,165,000	$ .35	$ 3,557,750	107,000
1885	82	12,874,000	.40	5,149,600	157,000
1890	49	8,332,352	.81	6,749,205	170,048

POTATOES—1896-1914.

Statistics Compiled from Reports of Crop Service Division of Iowa State Department of Agriculture.

Year	Average yield per acre	Total yield	Average farm value per bushel December 1st	Total value	Acreage
1896	87	14,814,795	$ .21	$ 2,962,950	170,285
1897	60	10,051,910	.45	4,523,360	163,248
1898	76	12,538,410	.31	3,826,900	164,456
1899	98	15,252,934	.24	3,660,714	154,243
1900	78	10,850,900	.40	4,340,360	149,680
*1901	37.4	5,098,460	.90	4,588,610	136,300
1902	91	12,051,670	.34	4,095,630	138,484
†1903	53.8	6,082,694	.75	4,562,020	113,433
1904	125	14,255,680	.28	3,991,590	113,250
1905	84	9,352,190	.50	4,676,045	111,335
1906	101	11,697,500	.48	5,614,800	115,310
1907	84	9,847,430	.62	6,105,406	117,350
1908	89.9	10,658,290	.59	6,288,391	118,517
1909	90	12,427,595	.53	6,586,625	138,139
1910	75.3	9,986,881	.58	5,792,391	132,640
1911	71	9,386,390	.71	8,353,887	132,865
1912	104	12,904,500	.44	5,677,980	124,030
1913	47.3	5,532,170	.85	4,702,344	117,000
1914	87	9,540,200	.58	5,533,316	110,205
Average 19 years	81.03	9,923,268	$ .51	$ 5,046,491	132,667

*Very dry.
†Very wet.

Estimated value in 1914 of 13 crops considered by the United States Department of Agriculture with comparisons. Figures taken from the Agricultural Outlook, February 6, 1915, issued by the United States Department of Agriculture.

State	Value of crops named in text (000 omitted)				Value of all crops, 1909, census (000 omitted)	Value crops named in text, 1909, compared with value all crops.	Rank of State			Value of crops named in text, 1914—		
	1914	1913	1909 (census)	Five-year average, 1909-13			Crops named in text		All crops, 1909	Compared with 1913	Compared with 5-year average	Compared with 1909
							1914	1909				
						P.ct.				P.ct.	P.ct.	P.ct.
Iowa	$ 351,450	$ 327,996	$ 287,065	$ 284,280	$ 314,666	91	1	2	2	+ 7.2	+23.	+ 22.4
Illinois	319,656	295,046	342,861	307,593	372,270	92	2	1	1	+ 8.3	+ 3.9	— 6.8
Texas	288,335	400,231	244,721	336,725	298,133	82	3	3	3	— 28.0	—14.4	+ 17.8
Kansas	287,662	124,136	189,091	164,844	214,860	88	4	5	7	+131.7	+74.5	+ 52.1
Nebraska	210,099	162,078	173,512	153,869	196,126	88	5	9	10	+ 29.6	+36.5	+ 21.1
Ohio	207,337	212,434	197,288	202,084	230,338	86	6	4	4	— 2.4	+ 2.6	+ 5.1
Missouri	192,981	174,520	188,524	188,689	220,664	85	7	6	6	+ 10.6	+ 2.3	+ 2.4
Indiana	189,553	185,917	181,234	172,499	204,210	89	8	7	9	+ 2.0	+ 9.9	+ 4.6
Minnesota	180,432	194,178	168,706	174,074	193,451	87	9	10	11	— 7.1	+ 3.7	+ 7.0
Pennsylvania	173,967	168,998	130,010	160,346	166,740	78	10	13	13	+ 2.9	+ 8.5	+ 33.8
New York	161,919	148,767	132,620	149,913	209,168	63	11	12	8	+ 8.8	+ 8.0	+ 22.1
Georgia	155,167	217,753	176,959	188,709	226,595	78	12	8	5	— 28.7	—17.8	— 12.3
Wisconsin	152,321	155,465	121,048	139,157	148,359	82	13	14	16	— 2.0	+ 9.5	+ 25.8
North Dakota	144,293	105,356	168,292	123,448	180,636	93	14	11	12	+ 37.0	+16.9	— 14.3
Michigan	139,899	122,555	114,808	125,501	162,005	71	15	15	14	+ 14.2	+11.5	+ 21.9
Oklahoma	134,159	111,532	112,344	117,618	133,454	84	16	17	22	+ 20.3	+14.1	+ 19.4
N. Carolina	124,918	150,203	102,783	126,456	142,890	72	17	22	19	— 16.8	— 1.2	+ 21.5
Kentucky	118,325	110,654	114,202	114,784	138,973	82	18	16	21	+ 6.9	+ 3.1	+ 3.6
Alabama	114,255	156,175	108,095	132,952	144,287	75	19	20	18	— 26.8	—14.1	+ 5.7
South Dakota	106,488	94,397	109,353	91,894	125,507	87	20	19	23	+ 12.8	+15.9	— 2.6
Tennessee	106,456	114,249	93,341	108,188	120,706	77	21	23	24	— 6.8	— 1.6	+ 14.1
S. Carolina	101,373	139,076	109,699	121,920	141,983	77	22	18	20	— 27.1	—16.9	— 7.6
Mississippi	93,882	130,622	107,054	117,385	147,316	73	23	21	17	— 28.1	—20.0	— 12.3
California	91,261	88,807	71,994	91,729	153,111	47	24	25	15	+ 2.7	— 0.5	+ 26.8
Arkansas	81,883	103,132	86,611	96,881	119,419	73	25	24	25	— 20.6	—15.5	— 5.5
Washington	75,653	73,246	64,340	69,465	78,927	82	26	27	27	+ 3.3	+ 8.	+ 17.6
Virginia	73,995	100,807	71,153	81,924	100,531	71	27	26	26	— 26.6	— 9.	+ 4.0
Louisiana	64,767	73,335	47,577	60,247	77,336	62	28	28	28	— 11.7	+ 7.	+ 36.1
Montana	47,893	41,214	22,394	35,264	29,715	75	29	36	38	+ 16.2	+35.	+113.9
Colorado	46,111	43,149	31,416	37,722	50,975	62	30	31	29	+ 6.9	+22.2	+ 46.8
Oregon	44,418	40,069	33,140	39,803	49,041	68	31	29	30	+ 10.9	+11.6	+ 34.0
Maryland	42,893	35,089	31,454	34,520	43,920	72	32	30	31	+ 22.2	+24.3	+ 36.4
West Virginia	38,937	42,213	27,749	35,556	40,375	69	33	34	32	— 7.8	+ 9.5	+ 40.3
Idaho	38,191	35,294	28,816	34,513	34,358	84	34	32	36	+ 8.2	+10.7	+ 32.5
Maine	34,039	35,553	27,836	34,834	39,318	71	35	33	34	— 4.3	— 2.3	+ 22.3
New Jersey	29,441	30,337	23,396	27,813	40,341	58	36	35	33	— 3.0	+ 5.9	+ 25.8
Vermont	23,449	24,332	18.577	23,197	27,447	68	37	37	39	— 3.6	+ 1.1	+ 26.2
Massachusetts	20,839	18,432	14,916	17,524	31,948	47	38	39	37	+ 13.1	+18.9	+ 39.7
Connecticut	20,799	18,930	14,872	18,837	22,488	66	39	40	40	+ 9.9	+10.4	+ 39.9
Utah	19,743	17,698	13,682	16,262	18,485	74	40	41	41	+ 11.6	+21.4	+ 44.3
Florida	19,405	19,688	14,932	17,384	36,142	41	41	38	35	— 1.4	+11.6	+ 30.0
Wyoming	16,352	12,851	7,508	12,899	10,023	75	42	43	43	+ 27.2	+26.8	+117.8
N. Hampshire	12,920	11,201	9,233	11,216	15,976	58	43	42	42	+ 15.3	+15.2	+ 39.9
N. Mexico	10,377	9,017	5,591	8,282	8,922	63	44	45	45	+ 15.1	+25.3	+ 85.6
Nevada	9,832	9,980	4,082	8,181	5,924	69	45	46	46	— 1.5	+20.2	+140.9
Delaware	9,437	7.810	6,543	7,649	9,122	72	46	44	44	+ 20.8	+23.4	+ 44.2
Arizona	6,894	8,818	3,993	6,604	5,497	73	47	47	47	— 21.8	+ 4.4	+ 72.7
Rhode Island	2,437	2,451	2,030	2,295	3,937	52	48	48	48	— 0.6	+ 6.2	+ 20.0
U. S.	$4,936,893	$4,905,881	$4,357,445	$4,633,529	$5,486,615	79.4	----	----	----	+ 0.6	+ 6.5	+ 13.3

CORN.

Estimates of acreage, production, and value, 1914 and 1913.

State	Acreage (000 omitted)		Yield per acre		Total production (000 omitted)		Price per bushel, Dec. 1, to producers		Value based on prices, Dec. 1, to producers (000 omitted)	
	1914	1913	1914	1913	1914	1913	1914	1913	1914	1913
	Acres	Acres	Bu.	Bu.	Bushels	Bushels	Cts.	Cts.	Dollars	Dollars
Maine	16	16	46.0	38.0	736	608	88	87	648	529
New Hampshire	21	22	46.0	37.0	966	814	82	81	792	659
Vermont	45	45	47.0	37.0	2,115	1,665	81	81	1,713	1,349
Massachusetts	48	48	47.0	40.5	2,256	1,944	85	85	1,918	1,652
Rhode Island	11	11	42.0	36.5	462	402	98	99	453	398
Connecticut	61	61	46.0	38.5	2,806	2,348	89	85	2,497	1,996
New York	550	527	41.0	28.5	22,550	15,020	83	81	18,716	12,166
New Jersey	272	275	38.5	39.5	10,472	10,862	76	75	7,959	8,146
Pennsylvania	1,463	1,463	42.5	39.0	62,178	57,057	73	72	45,390	41,081
Delaware	197	197	36.0	31.5	7,092	6,206	62	59	4,397	3,662
Maryland	663	670	37.0	33.0	24,531	22,110	68	65	16,681	14,372
Virginia	1,921	1,980	20.5	26.0	39,380	51,480	81	76	31,898	39,125
West Virginia	732	732	31.0	31.0	22,692	22,692	83	80	18,834	18,154
North Carolina	2,835	2,835	20.3	19.5	57,550	55,282	86	88	49,493	48,648
South Carolina	1,975	1,975	18.5	19.5	36,538	38,512	92	97	33,615	37,357
Georgia	4,000	4,066	14.0	15.5	56,000	63,023	85	91	47,600	57,351
Florida	700	675	16.0	15.0	11,200	10,125	80	82	8,960	8,302
Ohio	3,650	3,900	39.1	37.5	142,715	146,250	61	63	87,056	92,138
Indiana	4,949	4,900	33.0	36.0	163,317	176,400	58	60	94,724	105,840
Illinois	10,346	10,450	29.0	27.0	300,034	282,150	61	63	183,021	177,754
Michigan	1,750	1,675	36.0	33.5	63,000	56,112	67	67	42,210	37,595
Wisconsin	1,725	1,650	40.5	40.5	69,862	66,825	65	60	45,410	40,095
Minnesota	2,600	2,400	35.0	40.0	91,000	96,000	52	53	47,320	50,880
Iowa	10,248	9,950	38.0	34.0	389,424	338,300	50	60	194,712	202,980
Missouri	7,200	7,375	22.0	17.5	158,400	129,062	68	74	107,712	95,506
North Dakota	500	375	28.0	28.8	14,000	10,800	58	52	8,120	5,616
South Dakota	3,000	2,640	26.0	25.5	78,000	67,320	50	56	39,000	37,699
Nebraska	7,100	7,610	24.5	15.0	173,950	114,150	53	65	92,194	74,198
Kansas	5,850	7,320	18.5	3.2	108,225	23,424	63	78	68,182	18,271
Kentucky	3,650	3,650	25.0	20.5	91,250	74,825	64	76	58,400	56,867
Tennessee	3,350	3,350	24.0	20.5	80,400	68,675	68	77	54,672	52,880
Alabama	3,264	3,200	17.0	17.3	55,488	55,360	80	89	44,390	49,270
Mississippi	3,150	3,150	18.5	20.0	58,275	63,000	73	77	42,541	48,510
Louisiana	2,000	1,900	19.3	22.0	38,600	41,800	75	77	28,950	32,186
Texas	6,400	6,800	19.5	24.0	124,800	163,200	74	82	92,352	133,824
Oklahoma	4,000	4,750	12.5	11.0	50,000	52,250	64	72	32,000	37,620
Arkansas	2,400	2,475	17.5	19.0	42,000	47,025	80	78	33,600	36,680
Montana	50	28	28.0	31.5	1,400	882	76	77	1,064	679
Wyoming	21	17	25.0	29.0	525	493	70	80	368	394
Colorado	462	420	23.0	15.0	10,626	6,300	60	73	6,376	4,599
New Mexico	92	85	28.0	18.5	2,576	1,572	80	75	2,061	1,179
Arizona	18	17	32.0	28.0	576	476	120	110	691	524
Utah	12	10	35.0	34.0	420	340	75	70	315	238
Nevada	1	1	36.0	34.0	36	34	110	118	40	40
Idaho	19	14	31.0	32.0	589	448	72	68	424	305
Washington	36	34	27.0	28.0	972	952	73	80	710	762
Oregon	22	21	30.0	28.5	660	598	82	70	541	419
California	60	55	36.0	33.0	2,160	1,815	87	88	1,879	1,597
United States	103,435	105,820	25.8	23.1	2,672,804	2,446,988	63.7	69.1	1,702,599	1,692,092

WINTER WHEAT.

Estimates of acreage, production, and value, 1914 and 1913.

State	Acreage (000 omitted)		Yield per acre		Total production (000 omitted)		Price per bushel, Dec. 1, to producers		Value based on prices, Dec. 1, to producers (000 omitted)	
	1914	1913	1914	1913	1914	1913	1914	1913	1914	1913
	Acres	Acres	Bu.	Bu.	Bushels	Bushels	Cts.	Cts.	Dollars	Dollars
New York	360	340	22.5	20.0	8,100	6,800	108	93	8,748	6,324
New Jersey	79	80	18.0	17.6	1,422	1,408	109	96	1,550	1,352
Pennsylvania	1,312	1,286	18.1	17.0	23,747	21,862	104	91	24,697	19,894
Delaware	114	113	20.5	14.5	2,337	1,638	109	88	2,547	1,441
Maryland	612	610	21.5	13.3	13,158	8,113	106	89	13,947	7,221
Virginia	779	780	14.5	13.6	11,296	10,608	108	96	12,200	10,184
West Virginia	236	235	15.0	13.0	3,540	3,055	108	100	3,823	3,055
North Carolina	611	605	12.0	11.7	7,332	7,078	117	106	8,578	7,503
South Carolina	80	79	11.5	12.3	920	972	145	130	1,334	1,264
Georgia	140	140	12.1	12.2	1,694	1,708	134	120	2,270	2,050
Ohio	1,975	1,950	18.5	18.0	36,538	35,100	105	90	38,365	31,590
Indiana	2,485	2,150	17.4	18.5	43,239	39,775	103	88	44,536	35,002
Illinois	2,500	2,240	18.5	18.7	46,250	41,888	101	86	46,712	36,024
Michigan	879	835	19.7	15.3	17,316	12,776	103	89	17,835	11,371
Wisconsin	85	87	21.5	20.1	1,828	1,749	100	82	1,828	1,434
Minnesota	50	50	19.5	16.2	975	810	102	76	994	616
Iowa	510	450	21.6	23.4	11,016	10,530	96	76	10,575	8,003
Missouri	2,549	2,315	17.0	17.1	43,333	39,586	98	84	42,466	33,252
South Dakota	69	100	14.0	9.0	966	900	94	71	908	639
Nebraska	3,325	3,125	19.3	18.6	64,172	58,125	95	71	60,963	41,269
Kansas	8,600	6,655	20.5	13.0	176,300	86,515	95	79	167,485	68,347
Kentucky	760	725	16.5	13.6	12,540	9,860	103	96	12,916	9,466
Tennessee	720	700	15.5	12.0	11,160	8,400	105	98	11,718	8,232
Alabama	31	32	13.0	11.7	403	374	126	115	508	430
Mississippi	1	1	13.0	14.0	13	14	125	95	16	13
Texas	1,082	780	13.0	17.5	14,066	13,650	99	94	13,925	12,831
Oklahoma	2,525	1,750	19.0	10.0	47,975	17,500	92	82	44,137	14,350
Arkansas	125	101	13.0	13.0	1,625	1,313	99	90	1,609	1,182
Montana	481	480	23.0	25.6	11,063	12,288	91	66	10,067	8,110
Wyoming	45	40	24.0	25.0	1,080	1,000	89	72	961	720
Colorado	250	200	25.0	21.1	6,250	4,220	87	78	5,438	3,292
New Mexico	45	35	25.0	18.6	1,125	651	90	97	1,012	631
Arizona	31	29	28.0	32.0	868	928	125	110	1,085	1,021
Utah	223	200	25.0	23.0	5,575	4,600	86	73	4,794	3,358
Nevada	18	16	29.0	23.0	522	368	95	82	496	302
Idaho	339	310	27.5	27.4	9,322	8,494	87	63	8,110	5,351
Washington	960	1,200	26.5	27.0	25,440	32,400	100	73	25,440	23,652
Oregon	622	575	22.0	21.4	13,684	12,305	102	75	13,958	9,229
California	400	300	17.0	14.0	6,800	4,200	104	95	7,072	3,990
United States	36,008	31,699	19.0	16.5	684,990	523,561	98.6	82.9	675,623	433,995

SPRING WHEAT.

Estimates of acreage, production, and value, 1914 and 1913.

State	Acreage (000 omitted)		Yield per acre		Total production (000 omitted)		Price per bushel, Dec. 1, to producers		Value based on prices, Dec. 1, to producers (000 omitted)	
	1914	1913	1914	1913	1914	1913	1914	1913	1914	1913
	Acres	Acres	Bu.	Bu.	Bushels	Bushels	Cts.	Cts.	Dollars	Dollars
Maine	3	3	27.0	25.5	81	76	109	101	88	77
Vermont	1	1	29.0	24.5	29	24	100	100	29	24
Wisconsin	99	103	17.0	18.6	1,683	1,916	100	82	1,683	1,571
Minnesota	4,000	4,150	10.5	16.2	42,000	67,230	102	76	42,840	51,095
Iowa	300	345	13.5	17.0	4,050	5,865	96	76	3,888	4,457
North Dakota	7,285	7,510	11.2	10.5	81,592	78,855	101	73	82,408	57,564
South Dakota	3,400	3,675	9.0	9.0	30,600	33,075	94	71	28,764	23,483
Nebraska	343	350	11.5	12.0	3,944	4,200	95	71	3,747	2,982
Kansas	60	55	15.0	8.5	900	468	95	79	855	370
Montana	429	390	17.0	21.5	7,293	8,385	91	66	6,637	5,534
Wyoming	55	50	22.0	25.0	1,210	1,250	89	72	1,077	900
Colorado	225	260	22.5	21.0	5,062	5,460	87	78	4,404	4,259
New Mexico	31	30	23.0	19.0	713	570	90	97	642	553
Utah	68	65	25.0	28.0	1,700	1,820	86	73	1,462	1,329
Nevada	27	23	30.0	31.0	810	713	95	82	770	585
Idaho	210	200	24.0	28.0	5,040	5,600	87	63	4,385	3,528
Washington	820	1,100	20.0	19.0	16,400	20,900	100	73	16,400	15,257
Oregon	177	175	16.5	19.5	2,920	3,412	102	75	2,978	2,559
United States	17,533	18,485	11.8	13.0	206,027	239,819	98.6	73.4	203,057	176,127

WHEAT.

Estimates of acreage, production, and value, 1914 and 1913.

State	Acreage (000 omitted)		Yield per acre		Total production (000 omitted)		Price per bushel, Dec. 1, to producers		Value based on prices, Dec. 1, to producers (000 omitted)	
	1914	1913	1914	1913	1914	1913	1914	1913	1914	1913
	Acres	Acres	Bu.	Bu.	Bushels	Bushels	Cts.	Cts.	Dollars	Dollars
Maine	3	3	27.0	25.5	81	76	109	101	88	77
Vermont	1	1	29.0	24.5	29	24	100	100	29	24
New York	360	340	22.5	20.0	8,100	6,800	108	93	8,748	6,324
New Jersey	79	80	18.0	17.6	1,422	1,408	109	96	1,550	1,352
Pennsylvania	1,312	1,286	18.1	17.0	23,747	21,862	104	91	24,697	19,894
Delaware	114	113	20.5	14.5	2,337	1,638	109	88	2,547	1,441
Maryland	612	610	21.5	13.3	13,158	8,113	106	89	13,947	7,221
Virginia	779	780	14.5	13.6	11,296	10,608	108	96	12,200	10,184
West Virginia	236	235	15.0	13.0	3,540	3,055	108	100	3,823	3,055
North Carolina	611	605	12.0	11.7	7,332	7,078	117	106	8,578	7,503
South Carolina	80	79	11.5	12.3	920	972	145	130	1,334	1,264
Georgia	140	140	12.1	12.2	1,694	1,708	134	120	2,270	2,050
Ohio	1,975	1,950	18.5	18.0	36,538	35,100	105	90	38,365	31,590
Indiana	2,485	2,150	17.4	18.5	43,239	39,775	103	88	44,536	35,002
Illinois	2,500	2,240	18.5	18.7	46,250	41,888	101	86	46,712	36,024
Michigan	879	835	19.7	15.3	17,316	12,776	103	89	17,835	11,371
Wisconsin	184	190	19.1	19.3	3,511	3,665	100	82	3,511	3,005
Minnesota	4,050	4,200	10.6	16.2	42,975	68,040	102	76	43,834	51,711
Iowa	810	795	18.6	20.6	15,066	16,395	96	76	14,463	12,460
Missouri	2,549	2,315	17.0	17.1	43,333	39,586	98	84	42,466	33,252
North Dakota	7,285	7,510	11.2	10.5	81,592	78,855	101	73	82,408	57,564
South Dakota	3,469	3,775	9.1	9.0	31,566	33,975	94	71	29,672	24,122
Nebraska	3,668	3,475	18.6	17.9	68,116	62,325	95	71	64,710	44,251
Kansas	8,660	6,710	20.5	13.0	177,200	86,983	95	79	168,340	68,717
Kentucky	760	725	16.5	13.6	12,540	9,860	103	96	12,916	9,466
Tennessee	720	700	15.5	12.0	11,160	8,400	105	98	11,718	8,232
Alabama	31	32	13.0	11.7	403	374	126	115	508	430
Mississippi	1	1	13.0	14.0	13	14	125	95	16	13
Texas	1.082	780	13.0	17.5	14.066	13,650	99	94	13,925	12,831
Oklahoma	2,525	1,750	19.0	10.0	47,975	17,500	92	82	44,137	14,350
Arkansas	125	101	13.0	13.0	1,625	1,313	99	90	1,609	1,182
Montana	910	870	20.2	23.8	18,356	20,673	91	66	16,704	13,614
Wyoming	100	90	22.9	25.0	2,290	2,250	89	72	2.038	1,620
Colorado	475	460	23.8	21.0	11,312	9,680	87	78	9.842	7,551
New Mexico	76	65	24.2	18.8	1,838	1,221	90	97	1,654	1,184
Arizona	31	29	28.0	32.0	868	928	125	110	1,085	1,021
Utah	291	265	25.0	24.2	7,275	6,420	86	73	6,256	4,687
Nevada	45	39	29.6	27.7	1,332	1,081	95	82	1,266	887
Idaho	549	510	26.2	27.6	14,362	14.094	87	63	12,495	8,879
Washington	1,780	2,300	23.5	23.2	41,840	53,300	100	73	41,840	38,909
Oregon	799	750	20.8	21.0	16,604	15,717	102	75	16,936	11,788
California	400	300	17.0	14.0	6,800	4,200	104	95	7,072	3,990
United States	53,541	50.184	16.6	15.2	891,017	763,380	98.6	79.9	878.680	610,122

OATS.

Estimates of acreage, production, and value, 1914 and 1913.

State	Acreage (000 omitted)		Yield per acre		Total production (000 omitted)		Price per bushel, Dec. 1, to producers		Value based on prices, Dec. 1, to producers (000 omitted)	
	1914	1913	1914	1913	1914	1913	1914	1913	1914	1913
	Acres	Acres	Bu.	Bu.	Bushels	Bushels	Cts.	Cts.	Dollars	Dollars
Maine	141	140	41.0	40.0	5,781	5,600	57	55	3,295	3,080
New Hampshire	12	12	38.0	35.0	456	420	58	56	264	235
Vermont	79	79	42.5	39.0	3,358	3,081	55	52	1,847	1,602
Massachusetts	9	9	37.0	35.0	333	315	56	54	186	170
Rhode Island	2	2	27.5	26.0	55	52	58	50	32	26
Connecticut	11	11	29.0	28.0	319	308	55	55	175	169
New York	1,275	1,275	31.5	33.5	40,162	42,712	51	47	20,483	20,075
New Jersey	67	70	29.0	29.0	1,943	2,030	54	47	1,049	954
Pennsylvania	1,073	1,154	30.0	31.0	32,190	35,774	51	46	16,417	16,456
Delaware	4	4	27.0	30.5	108	122	50	51	54	62
Maryland	43	45	27.0	28.0	1,161	1,260	52	48	604	605
Virginia	191	195	15.5	21.5	2,960	4,192	58	52	1,717	2,180
West Virginia	105	115	20.0	24.0	2,100	2,760	55	51	1,155	1,408
North Carolina	250	230	17.5	19.5	4,375	4,485	65	61	2,844	2,736
South Carolina	375	360	20.0	23.5	7,500	8,460	71	71	5,325	6,007
Georgia	450	420	20.0	22.0	9,000	9,240	70	68	6,300	6,283
Florida	50	50	18.0	18.0	900	900	70	70	630	630
Ohio	1,650	1,800	30.5	30.2	50,325	54,360	45	40	22,646	21,744
Indiana	1,575	1,700	28.5	21.4	44,888	36,380	43	38	19,302	13,824
Illinois	4,300	4,375	29.3	23.8	125,990	104,125	44	38	55,436	39,568
Michigan	1,515	1,500	33.5	30.0	50,752	45,000	45	39	22,838	17,550
Wisconsin	2,300	2,275	27.0	36.5	62,100	83,038	43	37	26,703	30,724
Minnesota	3,040	2,980	28.0	37.8	85,120	112,644	40	32	34,048	36,046
Iowa	5,000	4,880	33.0	34.5	165,000	168,360	41	34	67,650	57,242
Missouri	1,200	1,250	21.5	21.2	25,800	26,500	44	45	11,352	11,925
North Dakota	2,318	2,250	28.0	25.7	64,904	57,825	37	30	24,014	17,348
South Dakota	1,606	1,590	27.5	26.5	44,165	42,135	38	34	16,783	14,326
Nebraska	2,175	2,250	32.0	26.5	69,600	59,625	40	38	27,840	22,658
Kansas	1,760	1,760	33.5	19.5	58,960	34,320	42	45	24,763	15,444
Kentucky	175	160	21.0	19.8	3,675	3,168	53	52	1,948	1,647
Tennessee	350	300	23.0	21.0	8,050	6,300	53	53	4,266	3,339
Alabama	390	325	22.0	20.5	8,580	6,662	69	69	5,920	4,597
Mississippi	160	140	23.0	20.0	3,680	2,800	65	63	2,392	1,764
Louisiana	70	45	23.0	22.0	1,610	990	63	57	1,014	564
Texas	900	1,000	25.0	32.5	22,500	32,500	48	51	10,800	16,575
Oklahoma	1,100	1,030	27.5	18.0	30,250	18,540	41	45	12,402	8,343
Arkansas	260	240	24.0	26.5	6,240	6,360	53	53	3,307	3,371
Montana	530	500	35.0	43.5	18,550	21,750	39	32	7,234	6,960
Wyoming	225	220	35.0	38.0	7,875	8,360	48	40	3,780	3,344
Colorado	325	305	40.0	35.0	13,000	10,675	45	44	5,850	4,697
New Mexico	52	50	38.0	30.0	1,976	1,500	45	60	889	900
Arizona	8	7	42.0	43.0	336	301	70	50	235	150
Utah	95	90	50.0	46.0	4,750	4,140	43	40	2,042	1,656
Nevada	13	11	52.0	43.0	676	473	55	65	372	307
Idaho	332	325	44.0	46.5	14,608	15,112	38	32	5,551	4,836
Washington	297	300	47.0	47.5	13,959	14,250	42	40	5,863	5,700
Oregon	364	360	35.0	42.3	12,740	15,228	45	38	5,733	5,787
California	220	210	35.0	31.6	7,700	6,636	53	60	4,081	3,982
United States	38,442	38,399	29.7	29.2	1,141,060	1,121,768	43.8	39.2	499,431	439,596

BARLEY.

Estimates of acreage, production, and value, 1914 and 1913.

State	Acreage (000 omitted)		Yield per acre		Total production (000 omitted)		Price per bushel, Dec. 1, to producers		Value based on prices, Dec. 1, to producers (000 omitted)	
	1914	1913	1914	1913	1914	1913	1914	1913	1914	1913
	Acres	Acres	Bu.	Bu.	Bushels	Bushels	Cts.	Cts.	Dollars	Dollars
Maine	5	5	30.0	28.0	150	140	81	80	122	112
New Hampshire	1	1	32.0	28.0	32	28	82	80	26	22
Vermont	12	12	34.5	32.0	414	384	75	80	310	307
New York	75	77	28.0	26.7	2,100	2,056	71	69	1,491	1,419
Pennsylvania	7	7	28.0	26.0	196	182	70	71	137	129
Maryland	5	5	33.0	29.0	165	145	66	64	109	93
Virginia	11	11	26.0	26.0	286	286	80	70	229	200
Ohio	35	40	25.0	24.0	875	960	59	58	516	557
Indiana	8	8	25.0	25.0	200	200	67	50	134	100
Illinois	55	54	29.5	26.0	1,622	1,404	61	57	989	800
Michigan	90	85	26.0	24.8	2,340	2,108	65	60	1,521	1,265
Wisconsin	675	725	27.3	25.0	18,428	18,125	62	60	11,425	10,875
Minnesota	1,378	1,450	23.0	24.0	31,694	34,800	53	48	16,798	16,704
Iowa	360	400	26.0	25.0	9,360	10,000	55	55	5,148	5,500
Missouri	5	5	24.0	22.0	120	110	65	60	78	66
North Dakota	1,450	1,275	19.5	20.0	28,275	25,500	45	40	12,724	10,200
South Dakota	850	958	23.0	17.5	19,550	16,765	50	46	9,775	7,712
Nebraska	113	110	23.5	16.0	2,656	1,760	47	49	1,248	862
Kansas	240	240	24.5	8.1	5,880	1,944	47	55	2,764	1,069
Kentucky	5	3	28.5	26.6	142	80	77	78	109	62
Tennessee	5	2	27.0	25.0	135	50	82	70	111	35
Texas	8	7	25.0	24.0	200	168	70	81	140	136
Oklahoma	7	7	25.0	9.0	175	63	53	80	93	50
Montana	70	60	30.5	31.0	2,135	1,860	53	48	1,132	893
Wyoming	16	13	33.0	30.5	528	396	64	61	338	242
Colorado	103	100	38.5	32.5	3,966	3,250	55	56	2,181	1,820
New Mexico	5	4	34.0	24.0	170	96	75	72	128	69
Arizona	35	38	36.0	39.0	1,260	1,482	60	73	756	1,082
Utah	32	30	45.0	38.5	1,440	1,155	50	55	720	635
Nevada	13	12	47.0	41.0	611	492	65	90	397	443
Idaho	185	180	38.0	42.0	7,030	7,560	50	48	3,515	3,629
Washington	182	180	39.0	40.5	7,098	7,290	52	52	3,691	3,791
Oregon	122	120	30.0	35.0	3,660	4,200	61	55	2,233	2,310
California	1,402	1,275	30.0	26.0	42,060	33,150	59	68	24,815	22,542
United States	7,565	7,499	25.8	23.8	194,953	178,189	54.3	53.7	105,903	95,731

RYE.

Estimates of acreage, production, and value, 1914 and 1913.

State	Acreage (000 omitted)		Yield per acre		Total production (000 omitted)		Price per bushel, Dec. 1, to producers		Value based on prices, Dec. 1, to producers (000 omitted)	
	1914	1913	1914	1913	1914	1913	1914	1913	1914	1913
	Acres	Acres	Bu.	Bu.	Bushels	Bushels	Cts.	Cts.	Dollars	Dollars
Vermont	1	1	20.0	18.0	20	18	80	90	16	16
Massachusetts	3	3	19.0	18.5	57	56	101	98	58	55
Connecticut	7	7	19.0	19.3	133	135	98	92	130	124
New York	129	133	17.7	17.2	2,283	2,288	89	75	2,032	1,716
New Jersey	70	70	18.5	18.0	1,295	1,260	82	80	1,062	1,008
Pennsylvania	280	280	18.0	17.5	5,040	4,900	83	74	4,183	3,626
Delaware	1	1	17.5	14.0	18	14	92	79	17	11
Maryland	25	27	17.0	14.4	425	389	86	76	366	296
Virginia	58	58	13.0	12.3	754	713	90	81	679	578
West Virginia	17	17	14.5	13.5	246	230	90	87	221	200
North Carolina	46	46	10.0	10.3	460	474	105	98	483	465
South Carolina	3	3	11.5	10.5	34	32	150	150	51	48
Georgia	13	13	9.3	9.5	121	124	150	135	182	167
Ohio	95	97	17.0	16.5	1,615	1,600	81	69	1,308	1,104
Indiana	99	103	16.3	15.2	1,614	1,566	85	62	1,372	971
Illinois	49	49	16.0	16.5	784	808	85	65	666	525
Michigan	371	375	16.0	14.3	5,936	5,362	91	62	5,402	3,324
Wisconsin	412	425	16.5	17.5	6,798	7,438	91	57	6,186	4,240
Minnesota	279	300	18.8	19.0	5,245	5,700	89	48	4,668	2,736
Iowa	59	60	19.0	18.2	1,121	1,092	77	60	863	655
Missouri	17	16	14.0	15.0	238	240	87	75	207	180
North Dakota	131	125	17.1	14.4	2,240	1,800	84	45	1,882	810
South Dakota	60	50	17.0	13.2	1,020	660	78	50	796	330
Nebraska	122	120	16.0	14.5	1,952	1,740	74	60	1,444	1,044
Kansas	50	45	20.0	14.0	1,000	630	80	75	800	472
Kentucky	22	22	13.7	12.4	301	273	95	87	286	238
Tennessee	22	17	13.0	12.0	286	204	98	99	280	202
Alabama	2	1	13.0	11.0	26	11	110	140	29	15
Texas	2	2	14.8	15.0	30	30	99	101	30	30
Oklahoma	6	5	16.0	9.5	96	48	95	86	91	41
Arkansas	1	1	10.5	11.5	10	12	105	95	10	11
Montana	10	10	21.0	21.0	210	210	70	55	147	116
Wyoming	5	4	17.0	19.0	85	76	81	64	69	49
Colorado	21	20	17.5	17.0	368	340	65	60	239	204
Utah	13	12	17.5	17.0	228	204	60	60	137	122
Idaho	3	3	20.0	22.0	60	66	67	58	40	38
Washington	8	8	19.7	21.0	158	168	85	60	134	101
Oregon	21	20	16.0	17.5	336	350	100	75	336	262
California	8	8	17.0	15.0	136	120	85	75	116	90
United States	2,541	2,557	16.8	16.2	42,779	41,381	86.5	63.4	37,018	26,220

BUCKWHEAT.

Estimates of acreage, production, and value, 1914 and 1913.

State	Acreage (000 omitted)		Yield per acre		Total production (000 omitted)		Price per bushel, Dec. 1, to producers		Value based on prices, Dec. 1, to producers (000 omitted)	
	1914	1913	1914	1913	1914	1913	1914	1913	1914	1913
	Acres	Acres	Bu.	Bu.	Bushels	Bushels	Cts.	Cts.	Dollars	Dollars
Maine	12	13	29.0	32.0	348	416	60	56	209	233
New Hampshire	1	1	25.0	31.0	25	31	70	66	18	20
Vermont	8	8	28.0	25.0	224	200	82	80	184	160
Massachusetts	2	2	18.5	17.0	37	34	84	80	31	27
Connecticut	3	3	18.5	17.0	56	51	95	95	53	48
New York	274	280	23.0	14.3	6,302	4,004	76	81	4,790	3,243
New Jersey	10	10	21.0	22.0	210	220	83	76	174	167
Pennsylvania	280	280	20.5	18.5	5,740	5,180	76	73	4,362	3,781
Delaware	3	3	19.0	17.0	57	51	76	69	43	35
Maryland	11	11	18.5	16.5	20[illegible]	182	81	75	165	136
Virginia	23	23	19.4	23.1	446	531	84	80	375	425
West Virginia	36	38	21.5	21.0	774	798	83	78	642	622
North Carolina	9	9	19.0	19.3	171	174	83	78	142	136
Ohio	18	18	24.0	18.0	432	324	76	76	328	246
Indiana	5	5	17.5	18.5	88	92	78	75	69	69
Illinois	4	4	17.7	17.0	71	68	95	80	67	54
Michigan	57	60	18.5	15.0	1,054	900	71	70	748	630
Wisconsin	17	18	17.5	16.5	298	297	76	69	226	205
Minnesota	6	6	17.0	16.5	102	99	70	64	71	63
Iowa	6	6	18.3	14.0	110	84	77	81	85	68
Missouri	2	2	15.5	11.0	31	22	93	85	29	19
Nebraska	1	1	18.5	20.0	18	20	84	79	15	16
Kansas	1	1	16.0	10.0	16	10	90	80	14	8
Tennessee	3	3	22.3	15.0	67	45	78	75	52	34
United States	792	805	21.3	17.2	16,881	13,833	76.4	75.5	12,892	10,445

POTATOES.

Estimates of acreage, production, and value, 1914 and 1913.

State	Acreage (000 omitted)		Yield per acre		Total production (000 omitted)		Price per bushel, Dec. 1, to producers		Value based on prices, Dec. 1, to producers (000 omitted)	
	1914	1913	1914	1913	1914	1913	1914	1913	1914	1913
	Acres	Acres	Bu.	Bu.	Bushels	Bushels	Cts.	Cts.	Dollars	Dollars
Maine	130	128	260	220	33,800	28,160	33	53	11,154	14,925
New Hampshire	17	17	159	122	2,703	2,074	60	83	1,622	1,721
Vermont	25	25	168	127	4,200	3,175	47	72	1,974	2,286
Massachusetts	27	27	155	105	4,185	2,835	71	85	2,971	2,410
Rhode Island	5	5	165	130	825	650	70	90	578	585
Connecticut	24	24	140	92	3,360	2,208	65	87	2,184	1,921
New York	367	360	145	74	53,215	26,640	44	80	23,415	21,312
New Jersey	92	94	108	95	9,936	8,930	61	82	6,061	7,323
Pennsylvania	268	265	105	88	28,140	23,320	58	80	16,321	18,656
Delaware	11	11	80	87	880	957	70	75	616	718
Maryland	44	43	78	87	3,432	3,741	60	67	2,059	2,506
Virginia	112	105	65	94	7,280	9,870	77	80	5,606	7,896
West Virginia	48	48	54	83	2,592	3,984	81	90	2,100	3,586
North Carolina	33	30	52	80	1,716	2,400	92	82	1,579	1,968
South Carolina	11	10	70	80	770	800	125	130	962	1,040
Georgia	13	12	60	81	780	972	105	105	819	1,021
Florida	13	12	80	76	1,040	912	113	117	1,175	1,067
Ohio	150	160	95	64	14,250	10,240	53	85	7,552	8,704
Indiana	75	75	80	53	6,000	3,975	56	84	3,360	3,339
Illinois	124	125	60	46	7,440	5,750	61	89	4,538	5,118
Michigan	364	350	121	96	44,044	33,600	30	53	13,213	17,808
Wisconsin	304	295	124	109	37,696	32,155	30	54	11,309	17,364
Minnesota	270	275	114	110	30,780	30,250	32	52	9,850	15,730
Iowa	147	150	86	48	12,642	7,200	59	82	7,459	5,904
Missouri	87	85	45	38	3,915	3,230	73	93	2,858	3,004
North Dakota	70	60	109	85	7,630	5,100	42	56	3,205	2,856
South Dakota	63	60	90	78	5,670	4,680	47	63	2,665	2,948
Nebraska	118	118	80	48	9,440	5,664	54	78	5,098	4,418
Kansas	72	73	62	40	4,464	2,920	77	91	3,437	2,657
Kentucky	50	50	45	49	2,250	2,450	84	102	1,890	2,499
Tennessee	35	38	43	64	1,505	2,432	91	97	1,370	2,359
Alabama	18	18	79	84	1,422	1,512	101	105	1,436	1,588
Mississippi	12	12	80	80	960	960	95	100	912	960
Louisiana	24	25	70	70	1,680	1,750	97	96	1,630	1,680
Texas	44	45	61	52	2,684	2,340	104	112	2,791	2,621
Oklahoma	32	32	70	60	2,240	1,920	90	105	2,016	2,016
Arkansas	25	25	60	72	1,500	1,800	97	100	1,455	1,800
Montana	37	36	140	140	5,180	5,040	64	67	3,315	3,377
Wyoming	15	12	108	140	1,620	1,680	70	65	1,134	1,092
Colorado	73	80	120	115	8,760	9,200	50	65	4,380	5,980
New Mexico	9	9	100	68	900	612	95	140	855	857
Arizona	1	1	110	75	110	75	120	135	132	101
Utah	20	20	140	180	2,800	3,600	60	58	1,680	2,088
Nevada	12	11	130	160	1,560	1,760	70	68	1,092	1,197
Idaho	34	34	155	170	5,270	5,780	48	50	2,530	2,890
Washington	59	60	128	123	7,552	7,380	55	60	4,154	4,428
Oregon	49	50	97	135	4,753	6,750	60	58	2,852	3,915
California	75	68	138	119	10,350	8,092	70	70	7,245	5,664
United States	3,708	3,668	109.5	90.4	405,921	331,525	48.9	68.7	198,609	227,903

SWEET POTATOES.

Estimates of acreage, production, and value, 1914 and 1913.

State	Acreage (000 omitted)		Yield per acre		Total production (000 omitted)		Price per bushel, Dec. 1, to producers		Value based on prices, Dec. 1, to producers (000 omitted)	
	1914	1913	1914	1913	1914	1913	1914	1913	1914	1913
	Acres	Acres	Bu.	Bu.	Bushels	Bushels	Cts.	Cts.	Dollars	Dollars
New Jersey	22	23	100	138	2,200	3,174	95	78	2,090	2,476
Pennsylvania	1	1	105	110	105	110	86	90	90	99
Delaware	5	5	120	135	600	675	70	60	420	405
Maryland	8	8	125	141	1,000	1,128	70	60	700	677
Virginia	31	33	92	108	2,852	3,564	76	70	2,168	2,495
West Virginia	2	2	92	91	184	182	98	100	180	182
North Carolina	76	80	90	100	6,840	8,000	65	61	4,446	4,880
South Carolina	48	50	85	92	4,080	4,600	70	75	2,856	3,450
Georgia	79	83	85	87	6,715	7,221	69	68	4,633	4,910
Florida	19	21	120	110	2,280	2,310	80	75	1,824	1,732
Ohio	1	1	110	90	110	90	96	106	106	95
Indiana	1	1	100	78	100	78	90	103	90	80
Illinois	8	8	84	70	672	560	95	106	638	594
Iowa	2	2	100	80	200	160	127	150	254	240
Missouri	6	6	84	56	504	336	96	105	484	353
Kansas	5	5	110	50	550	250	106	110	583	275
Kentucky	10	9	105	75	1,050	675	77	94	808	634
Tennessee	25	20	100	80	2,500	1,600	69	80	1,725	1,280
Alabama	63	70	93	95	5,859	6,650	65	67	3,808	4,456
Mississippi	50	55	90	98	4,500	5,390	63	62	2,835	3,342
Louisiana	59	60	87	85	5,133	5,100	64	70	3,285	3,570
Texas	52	50	101	80	5,252	4.000	87	95	4,569	3,800
Oklahoma	6	6	102	64	612	384	89	104	545	399
Arkansas	18	20	95	90	1,710	1,800	77	80	1,317	1,440
California	6	6	161	170	966	1,020	87	100	840	1,020
United States	603	625	93.8	94.5	56,574	59,057	73.0	72.6	41,294	42,884

HAY.

Estimates of acreage, production, and value, 1914 and 1913.

State	Acreage (000 omitted)		Yield per acre		Total production (000 omitted)		Price per ton, Dec. 1, to producers		Value based on prices, Dec. 1, to producers (000 omitted)	
	1914	1913	1914	1913	1914	1913	1914	1913	1914	1913
	Acres	Acres	Tons	Tons	Tons	Tons	Dolls.	Dolls.	Dollars	Dollars
Maine	1,230	1,194	1.15	1.00	1,414	1,194	13.10	13.90	18,523	16,597
New Hampshire	520	495	1.15	1.00	598	495	17.00	17.20	10,166	8,514
Vermont	990	1,000	1.20	1.28	1,188	1,280	14.60	14.50	17,345	18,560
Massachusetts	480	475	1.32	1.21	634	575	21.50	21.10	13,631	12,132
Rhode Island	58	58	1.17	1.17	68	68	20.20	21.20	1,374	1,442
Connecticut	375	379	1.25	1.14	469	432	19.50	20.10	9,146	8,683
New York	4,653	4,700	1.20	1.14	5,584	5,358	14.60	15.30	81,526	81,977
New Jersey	361	361	1.35	1.30	487	469	19.50	19.00	9,496	8,911
Pennsylvania	3,141	3,141	1.28	1.32	4,020	4,146	14.50	14.90	58,290	61,775
Delaware	72	72	1.10	1.30	79	94	17.00	15.70	1,343	1,476
Maryland	390	390	1.15	1.26	448	491	15.30	15.20	6,854	7,463
Virginia	650	750	.72	1.27	468	952	17.20	15.50	8,050	14,756
West Virginia	696	740	.92	1.25	640	925	17.20	14.90	11,008	13,782
North Carolina	320	320	1.15	1.31	368	419	17.10	16.50	6,293	6,914
South Carolina	210	210	1.15	1.16	242	244	17.00	18.70	4,114	4,563
Georgia	250	250	1.35	1.40	338	350	16.20	17.90	5,476	6,265
Florida	48	47	1.35	1.35	65	63	17.20	18.20	1,118	1,147
Ohio	2,812	2,960	1.13	1.30	3,178	3,848	13.40	12.80	42,585	49,254
Indiana	1,764	1,800	1.00	1.00	1,764	1,800	14.10	14.10	24,872	25,380
Illinois	2,250	2,500	.85	.98	1,912	2,450	14.40	14.10	27,533	34,545
Michigan	2,352	2,400	1.28	1.05	3,011	2,520	12.00	13.10	36,132	33,012
Wisconsin	2,550	2,375	1.75	1.62	4,462	3,848	9.30	11.10	41,497	42,713
Minnesota	1,743	1,660	1.89	1.50	3,294	2,490	6.10	6.60	20,093	16,434
Iowa	2,950	3,000	1.38	1.48	4,071	4,440	10.10	9.60	41,117	42,624
Missouri	2,600	3,000	.70	.60	1,820	1,800	13.60	14.50	24,752	26,100
North Dakota	400	340	1.45	1.14	580	388	5.20	5.80	3,016	2,250
South Dakota	500	460	1.70	1.20	850	552	5.70	6.50	4,845	3,588
Nebraska	1,500	1,250	1.69	1.34	2,535	1,675	6.90	8.70	17,492	14,572
Kansas	1,650	1,500	1.51	.90	2,492	1,350	7.40	12.50	18,441	16,875
Kentucky	750	775	.95	.87	712	674	16.00	16.50	11,392	11,121
Tennessee	800	900	1.20	1.21	960	1,089	17.00	16.20	16,320	17,642
Alabama	220	210	1.31	1.36	288	286	13.80	14.20	3,974	4.061
Mississippi	210	220	1.45	1.33	304	293	12.00	13.50	3,648	3,956
Louisiana	200	160	1.90	1.50	380	240	12.00	12.50	4,560	3,000
Texas	450	400	1.75	1.16	788	464	9.80	11.80	7,722	5,475
Oklahoma	450	450	1.13	.85	508	382	7.90	10.40	4,013	3,973
Arkansas	320	320	1.05	1.20	336	384	12.90	13.50	4,334	5,184
Montana	700	660	2.50	1.80	1,750	1,188	8.70	9.60	15,225	11,405
Wyoming	500	480	2.30	1.90	1,150	912	7.50	6.70	8,625	6,110
Colorado	970	890	2.40	2.05	2,328	1,824	7.40	10.00	17,227	18,240
New Mexico	206	192	2.50	2.08	515	399	9.30	12.10	4,790	4.828
Arizona	142	135	3.20	4.00	454	540	8.80	11.00	3,995	5,940
Utah	406	390	2.75	2.33	1,116	909	7.70	9.10	8,593	8,272
Nevada	247	235	3.25	2.75	803	646	8.30	11.00	6,665	7,106
Idaho	705	705	2.65	2.90	1,868	2,044	7.30	7.20	13,636	14,717
Washington	796	780	2.20	2.30	1,751	1,794	11.00	10.90	19,261	19,555
Oregon	858	825	2.00	2.10	1,716	1,732	9.20	9.00	15,787	15,588
California	2,700	2,400	1.95	1.50	5,265	3,600	8.20	13.50	43,173	48,600
United States	49,145	48,954	1.43	1.31	70,071	64,116	11.12	12.43	779,068	797,077

FLAXSEED.

Estimates of acreage, production, and value, 1914 and 1913.

State	Acreage (000 omitted)		Yield per acre		Total production (000 omitted)		Price per ton, Dec. 1, to producers		Value based on prices, Dec. 1, to producers (000 omitted)	
	1914	1913	1914	1913	1914	1913	1914	1913	1914	1913
	Acres	Acres	Bu.	Bu.	Bushels	Bushels	Cts.	Cts.	Dollars	Dollars
Wisconsin	8	9	13.5	14.0	108	126	125	123	135	155
Minnesota	315	350	9.3	9.0	2,930	3,150	128	123	3,750	3,874
Iowa	20	28	9.5	9.4	190	263	120	123	228	323
Missouri	8	10	8.0	5.0	64	50	104	115	67	58
North Dakota	840	1,000	8.3	7.2	6,972	7,200	128	121	8,924	8,712
South Dakota	320	425	7.5	7.2	2,400	3,060	123	120	2,952	3,672
Nebraska	7	9	7.0	6.0	49	54	119	110	58	59
Kansas	45	50	6.0	6.0	270	300	125	116	338	348
Montana	320	400	8.0	9.0	2,560	3,600	120	115	3,072	4,140
Colorado	2	10	8.0	5.0	16	50	100	115	16	58
United States	1,885	2,291	8.3	7.8	15,559	17,853	126	120	19,510	21,399

ESTIMATED NUMBER ON FARMS AND VALUE OF DOMESTIC ANIMALS.

As Published by U. S. Dept. of Agriculture in Agricultural Outlook, Feb. 6, 1915.

HORSES.

Estimated number on farms, and value, January 1, 1915, with comparisons.

State	Number (000 omitted)				Value per head, Jan. 1			Total value Jan. 1 (000 omitted)		
	Jan. 1, 1915		Jan. 1, 1914	Apr. 15, 1910 (census)	1915	1914	1910	1915	1914	1910[2]
	Per cent.[1]	Total								
Maine	102	113	111	108	$146.00	$150.00	$125.00	$ 16,498	$ 16,650	$ 13,500
New Hampshire	100	47	47	46	127.00	137.00	106.00	5,969	6,439	4,876
Vermont	100	88	88	81	131.00	129.00	106.00	11,528	11,352	8,586
Massachusetts	99	64	65	64	155.00	161.00	128.00	9,920	10,465	8,192
Rhode Island	100	10	10	9	146.00	156.00	129.00	1,460	1,560	1,161
Connecticut	100	47	47	46	148.00	153.00	126.00	6,956	7,191	5,796
New York	100	615	615	591	142.00	145.00	125.00	87,330	89,175	73,875
New Jersey	101	92	91	89	146.00	157.00	134.00	13,432	14,287	11,926
Pennsylvania	102	596	584	550	134.00	139.00	132.00	79,864	81,176	72,600
Delaware	102	36	35	33	100.00	106.00	106.00	3,600	3,710	3,498
Maryland	101	167	165	156	113.00	119.00	108.00	18,871	19,635	16,848
Virginia	101	354	350	330	109.00	114.00	107.00	38,586	39,900	35,310
West Virginia	101	192	190	180	114.00	122.00	112.00	21,888	23,180	20,160
North Carolina	101	182	180	166	130.00	139.00	121.00	23,660	25,020	20,086
South Carolina	98	83	85	80	131.00	144.00	127.00	10,873	12,240	10,160
Georgia	98	125	128	120	119.00	131.00	125.00	14,875	16,768	15,000
Florida	103	57	55	46	121.00	122.00	109.00	6,897	6,710	5,014
Ohio	101	910	901	910	128.00	132.00	129.00	116,480	118,932	117,390
Indiana	100	854	854	814	114.00	116.00	122.00	97,356	99,064	99,308
Illinois	98	1,467	1,497	1,453	105.00	113.00	124.00	154,035	169,161	180,172
Michigan	103	673	653	610	132.00	139.00	126.00	88,836	90,767	76,860
Wisconsin	104	705	678	615	131.00	136.00	121.00	92,355	92,208	74,415
Minnesota	103	872	847	753	116.00	125.00	111.00	101,152	105,875	83,583
Iowa	101	1,600	1,584	1,492	105.00	118.00	120.00	168,000	186,912	179,040
Missouri	100	1,095	1,095	1,073	88.00	98.00	103.00	96,360	107,310	110,519
North Dakota	105	785	748	651	110.00	112.00	114.00	86,350	83,776	74,214
South Dakota	104	759	730	669	89.00	96.00	105.00	67,551	70,080	70,245
Nebraska	99	1,038	1,048	1,008	92.00	94.00	108.00	95,496	98,512	108,864
Kansas	102	1,132	1,110	1,147	93.00	93.00	107.00	105,276	103,230	122,729
Kentucky	100	443	443	443	95.00	103.00	105.00	42,085	45,629	46,515
Tennessee	102	353	346	350	100.00	116.00	112.00	35,300	40,136	39,200
Alabama	100	149	149	136	96.00	113.00	95.00	14,304	16,837	12,920
Mississippi	100	241	241	216	86.00	95.00	85.00	20,726	22,895	18,360
Louisiana	100	191	191	181	83.00	85.00	79.00	15,853	16,235	14,299
Texas	98	1,192	1,216	1,170	78.00	80.00	73.00	92,976	97,280	85,410
Oklahoma	99	758	766	743	81.00	85.00	81.00	61,398	65,110	60,183
Arkansas	101	276	273	255	76.00	93.00	82.00	20,976	25,389	20,910
Montana	105	391	372	316	86.00	102.00	80.00	33,626	37,944	25,280
Wyoming	103	176	171	156	79.00	79.00	83.00	13,904	13,509	12,948
Colorado	102	347	340	294	85.00	83.00	85.00	29,495	28,220	24,990
New Mexico	110	217	197	179	55.00	55.00	47.00	11,935	10,835	8,413
Arizona	105	118	112	100	70.00	73.00	62.00	8,260	8,176	6,200
Utah	104	146	140	116	86.00	91.00	85.00	12,556	12,740	9,860
Nevada	102	78	76	68	69.00	78.00	78.00	5,382	5,928	5,304
Idaho	104	243	234	198	92.00	96.00	102.00	22,356	22,464	20,196
Washington	102	311	305	281	96.00	106.00	108.00	29,856	32,330	30,348
Oregon	101	304	301	272	90.00	96.00	103.00	27,360	28,896	28,016
California	101	503	498	469	100.00	100.00	105.00	50,300	49,800	49,245
United States	101.1	21,195	20,962	19,833	$103.33	$109.32	$108.03	$2,190,102	$2,291,638	$2,142,524

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[1] Compared with Jan. 1, 1914.

[2] Based on census numbers on Apr. 15 and the Department of Agriculture's estimated farm value per head Jan. 1, 1910.

MULES.

Estimated number on farms, and value, January 1, 1915, with comparisons.

State	Number (000 omitted)				Value per head, Jan. 1			Total value Jan. 1 (000 omitted)		
	Jan. 1, 1915		Jan. 1, 1914	Apr. 15, 1910 (census)	1915	1914	1910	1915	1914	1910[2]
	Per cent.[1]	Total								
New York	101	4	4	4	$152.00	$154.00	$132.00	$ 608	$ 616	$ 528
New Jersey	103	4	4	4	169.00	177.00	155.00	676	708	620
Pennsylvania	102	46	45	44	142.00	148.00	145.00	6,532	6,660	6,380
Delaware	104	6	6	6	121.00	126.00	125.00	726	756	750
Maryland	104	25	24	23	138.00	143.00	130.00	3,450	3,432	2,990
Virginia	101	62	61	60	128.00	136.00	130.00	7,936	8,296	7,800
West Virginia	100	12	12	12	119.00	131.00	120.00	1,428	1,572	1,440
North Carolina	101	194	192	175	151.00	160.00	137.00	29,294	30,720	23,975
South Carolina	97	166	171	156	149.00	167.00	158.00	24,734	28,557	24,648
Georgia	97	309	319	295	140.00	161.00	157.00	43,260	51,359	46,315
Florida	103	28	27	23	163.00	168.00	155.00	4,564	4,536	3,565
Ohio	100	24	24	23	127.00	132.00	125.00	3,048	3,168	2,875
Indiana	100	86	86	82	117.00	121.00	126.00	10,062	10,406	10,332
Illinois	98	145	148	148	110.00	121.00	131.00	15,950	17,908	19,388
Michigan	102	4	4	4	131.00	133.00	122.00	524	532	488
Wisconsin	101	3	3	3	127.00	135.00	115.00	381	405	345
Minnesota	102	6	6	6	124.00	134.00	114.00	744	804	684
Iowa	101	58	57	56	111.00	123.00	123.00	6,438	7,011	6,888
Missouri	101	329	326	343	98.00	112.00	119.00	32,242	36,512	40,817
North Dakota	105	8	8	8	122.00	130.00	130.00	976	1,040	1,040
South Dakota	103	14	14	12	106.00	110.00	121.00	1,484	1,540	1,452
Nebraska	101	85	84	83	105.00	105.00	119.00	8,925	8,820	9,877
Kansas	105	233	222	208	102.00	105.00	116.00	23,766	23,310	24,128
Kentucky	101	231	229	225	106.00	118.00	118.00	24,486	27,022	26,550
Tennessee	102	275	270	276	110.00	127.00	123.00	30,250	34,290	33,948
Alabama	101	281	278	247	114.00	135.00	122.00	32,034	37,530	30,134
Mississippi	102	292	286	256	108.00	115.00	113.00	31,536	32,890	28,928
Louisiana	100	132	132	132	125.00	128.00	116.00	16,500	16,896	15,312
Texas	100	753	753	676	100.00	109.00	99.00	75,300	82,077	66,924
Oklahoma	100	269	269	257	96.00	104.00	105.00	25,824	27,976	26,985
Arkansas	102	240	235	222	96.00	114.00	109.00	23,040	26,790	24,198
Montana	102	4	4	4	98.00	106.00	102.00	392	424	408
Wyoming	103	2	2	2	101.00	113.00	106.00	202	226	212
Colorado	103	18	17	15	100.00	101.00	105.00	1,800	1,717	1,575
New Mexico	104	16	15	15	81.00	92.00	79.00	1,296	1,380	1,185
Arizona	110	7	6	4	104.00	144.00	108.00	728	864	432
Utah	100	2	2	2	79.00	82.00	80.00	158	164	160
Nevada	98	3	3	3	79.00	79.00	79.00	237	237	237
Idaho	103	4	4	4	85.00	103.00	116.00	340	412	464
Washington	104	15	14	12	104.00	116.00	121.00	1,560	1,624	1,452
Oregon	100	10	10	10	96.00	107.00	108.00	960	1,070	1,080
California	101	74	73	70	120.00	120.00	122.00	8,880	8,760	8,540
United States	100.7	4,479	4,449	4,210	$112.36	$123.85	$120.20	$ 503.271	$ 551,017	$ 506,049

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[1] Compared with Jan. 1, 1914.

[2] Based on census numbers on Apr. 15 and the Department of Agriculture's estimated farm value per head Jan. 1, 1910.

MILCH COWS.

Estimated number on farms, and value, January 1, 1915, with comparisons.

State	Number (000 omitted)				Value per head, Jan. 1			Total value Jan. 1 (000 omitted)		
	Jan. 1, 1915		Jan. 1, 1914	Apr. 15, 1910 (census)	1915	1914	1910	1915	1914	1910[2]
	Per cent.[1]	Total								
Maine	99	157	159	157	$ 54.00	$ 47.50	$ 33.00	$ 8,478	$ 7,552	$ 5,181
New Hampshire	99	95	96	101	60.00	53.50	36.20	5,700	5,136	3,656
Vermont	101	268	265	265	52.00	47.50	34.20	13,936	12,588	9,063
Massachusetts	97	157	162	172	66.00	59.00	42.00	10,362	9,558	7,224
Rhode Island	98	23	23	23	71.00	70.00	43.80	1,633	1,610	1,007
Connecticut	98	118	120	123	66.70	58.00	41.00	7,871	6,960	5,043
New York	103	1,509	1,465	1,510	61.00	57.00	39.50	92,049	83,505	59,645
New Jersey	100	146	146	154	68.00	67.00	47.50	9,928	9,782	7,315
Pennsylvania	100	943	943	934	59.50	58.40	39.00	56,108	55,071	36,426
Delaware	104	41	39	36	56.50	52.00	38.00	2,316	2,028	1,368
Maryland	104	177	170	167	54.00	53.80	37.30	9,558	9,146	6,229
Virginia	102	349	342	356	43.50	42.00	29.70	15,182	14,364	10,573
West Virginia	101	234	232	240	51.00	50.00	35.00	11,934	11,600	8,400
North Carolina	102	315	309	309	36.50	35.10	25.50	11,498	10,846	7,880
South Carolina	100	185	185	181	33.00	34.20	28.90	6,105	6,327	5,231
Georgia	101	406	402	406	32.00	31.30	25.00	12,992	12,583	10,150
Florida	104	133	128	116	42.50	38.00	32.50	5,652	4,864	3,770
Ohio	101	895	886	905	60.00	60.00	42.80	53,700	53,160	38,734
Indiana	101	646	640	634	55.00	53.90	41.00	35,530	34,496	25,994
Illinois	99	1,007	1,017	1,050	59.50	58.20	42.80	59,916	59,169	44,940
Michigan	102	814	798	767	60.50	59.70	39.50	49,247	47,641	30,296
Wisconsin	105	1,626	1,549	1,473	59.50	59.90	36.60	96,747	92,785	53,912
Minnesota	102	1,186	1,163	1,085	53.50	55.00	33.00	63,451	63,965	35,805
Iowa	102	1,377	1,350	1,407	57.00	60.50	36.00	78,489	81,675	50,652
Missouri	101	797	789	856	54.50	54.00	34.80	43,436	42,606	29,789
North Dakota	111	339	305	259	61.50	59.00	33.90	20,848	17,995	8,780
South Dakota	108	453	419	370	59.50	61.00	33.00	26,954	25,559	12,210
Nebraska	102	625	613	614	62.50	60.70	35.00	39,062	37,209	21,490
Kansas	104	726	698	736	63.50	57.50	36.90	46,101	40,135	27,158
Kentucky	102	390	382	410	45.50	44.50	32.70	17,745	16,999	13,407
Tennessee	102	355	348	397	41.00	41.40	27.50	14,555	14,407	10,918
Alabama	99	384	388	392	31.50	32.40	23.00	12,096	12,571	9,016
Mississippi	103	434	421	430	35.00	34.00	23.50	15,190	14,314	10,105
Louisiana	102	268	263	279	36.00	34.00	24.30	9,648	8,942	6,780
Texas	102	1,086	1,065	1,014	47.50	45.60	29.50	51,585	48,564	29,913
Oklahoma	102	494	484	531	52.00	50.30	31.50	25,688	24,345	16,726
Arkansas	103	387	376	426	37.00	37.50	22.00	14,319	14,100	9,372
Montana	110	114	104	77	75.00	70.50	46.50	8,550	7,332	3,580
Wyoming	112	46	41	33	78.00	74.50	43.70	3,588	3,054	1,442
Colorado	110	205	186	145	68.00	63.00	41.00	13,940	11,718	5,945
New Mexico	110	68	62	51	61.50	55.00	38.80	4,182	3,410	1,979
Arizona	120	44	37	29	74.00	64.00	43.00	3,256	2,368	1,247
Utah	104	92	88	76	62.00	59.00	34.00	5,704	5,192	2,584
Nevada	107	24	22	17	77.50	65.10	44.00	1,860	1,432	748
Idaho	107	120	112	86	72.00	69.80	41.40	8,640	7,818	3,560
Washington	108	253	234	186	74.00	74.00	41.80	18,722	17,316	7,775
Oregon	107	210	196	173	63.50	65.00	39.60	13,335	12,740	6,851
California	105	541	515	467	72.00	62.00	38.40	38,952	31,930	17,933
United States	102.5	21,262	20,737	20,625	$ 55.33	$ 53.94	$ 35.29	$1,176,338	$1,118,487	$ 727,802

[1] Compared with Jan. 1, 1914.

[2] Based on census numbers on Apr. 15 and the Department of Agriculture's estimated farm value per head Jan. 1, 1910.

CATTLE OTHER THAN MILCH COWS.

Estimated number on farms, and value, January 1, 1915, with comparisons.

State	Number (000 omitted)				Value per head, Jan. 1			Total value Jan. 1 (000 omitted)		
	Jan. 1, 1915		Jan. 1, 1914	Apr. 15, 1910 (census)	1915	1914	1910	1915	1914	1910[2]
	Per cent.[1]	Total								
Maine	101	101	100	100	$ 26.10	$ 23.40	$ 16.90	$ 2,636	$ 2,340	$ 1,690
New Hampshire	99	64	65	67	28.00	26.80	20.30	1,792	1,742	1,360
Vermont	101	167	165	165	23.10	21.10	14.40	3,858	3,482	2,376
Massachusetts	101	83	82	80	25.10	23.10	16.70	2,083	1,894	1,336
Rhode Island	98	11	11	11	26.80	28.10	17.50	295	309	192
Connecticut	99	71	72	72	29.80	27.90	19.10	2,116	2,009	1,375
New York	102	894	876	913	28.20	27.20	18.20	25,211	23,827	16,617
New Jersey	103	70	68	69	31.50	30.50	21.40	2,205	2,074	1,477
Pennsylvania	101	638	632	653	29.30	28.30	19.20	18,693	17,886	12,558
Delaware	104	20	19	19	31.20	29.20	21.00	624	555	399
Maryland	102	121	119	121	29.50	29.40	21.10	3,570	3,499	2,553
Virginia	100	450	450	503	28.60	27.60	19.40	12,870	12,420	9,758
West Virginia	102	338	331	380	36.30	35.90	22.50	12,269	11,883	8,550
North Carolina	101	369	365	392	17.00	17.30	12.50	6,273	6,314	4,900
South Carolina	100	211	211	209	14.60	14.90	12.00	3,081	3,144	2,508
Georgia	100	660	660	674	12.80	12.70	10.30	8,448	8,382	6,942
Florida	100	735	735	729	14.50	13.70	10.30	10,658	10,070	7,509
Ohio	100	838	838	933	34.60	35.40	24.10	28,995	29,665	22,485
Indiana	98	693	707	729	35.20	33.90	24.50	24,394	23,967	17,860
Illinois	97	1,180	1,216	1,391	37.80	35.90	26.40	44,604	43,654	36,722
Michigan	104	707	680	731	29.80	28.10	18.50	21,069	19,108	13,524
Wisconsin	105	1,216	1,158	1,207	27.70	27.10	16.40	33,683	31,382	19,795
Minnesota	103	1,208	1,173	1,262	24.70	24.30	14.30	29,838	28,504	18,047
Iowa	105	2,683	2,555	3,041	37.50	39.20	22.20	100,612	100,156	67,510
Missouri	102	1,414	1,386	1,705	37.90	36.10	22.60	53,591	50,035	38,533
North Dakota	110	515	468	485	36.00	34.60	20.50	18,540	16,193	9,942
South Dakota	106	967	912	1,165	39.50	39.50	21.50	38,196	36,024	25,048
Nebraska	108	2,034	1,883	2,318	40.80	38.10	21.90	82,987	71,742	50,764
Kansas	113	1,768	1,565	2,343	42.50	36.90	23.70	75,140	57,748	55,529
Kentucky	103	543	527	591	30.40	28.80	19.90	16,507	15,178	11,761
Tennessee	101	503	498	600	22.40	21.40	13.80	11,267	10,657	8,280
Alabama	98	504	514	540	12.60	12.00	9.00	6,350	6,168	4,860
Mississippi	105	514	490	583	14.30	13.50	8.40	7,350	6,615	4,897
Louisiana	100	448	448	526	16.40	15.30	10.30	7,347	6,854	5,418
Texas	99	5,121	5,173	5,921	31.70	26.50	15.30	162,336	137,084	90,591
Oklahoma	102	1,119	1,097	1,423	35.40	33.40	19.20	39,613	36,640	27,322
Arkansas	102	484	475	602	17.20	15.80	9.00	8,325	7,505	5,418
Montana	105	791	753	866	49.00	46.40	27.40	38,759	34,939	23,728
Wyoming	115	628	546	734	53.30	49.40	26.40	33,472	26,972	19,378
Colorado	105	996	949	983	43.70	40.00	23.00	43,525	37,960	22,609
New Mexico	108	991	918	1,031	35.50	32.70	17.40	35,180	30,019	17,939
Arizona	107	791	739	796	34.50	32.50	19.30	27,290	24,018	15,363
Utah	107	381	356	336	35.80	35.50	18.30	13,640	12,638	6,149
Nevada	103	450	437	433	40.70	38.90	20.70	18,315	16,999	8,963
Idaho	107	379	354	368	41.80	41.20	21.40	15,842	14,585	7,875
Washington	108	215	199	216	34.90	35.70	19.90	7,504	7,104	4,298
Oregon	107	503	470	552	36.30	38.00	18.50	18,259	17,860	10,212
California	105	1,480	1,410	1,610	39.30	33.00	20.10	58,164	46,530	32,361
United States	103.4	37,067	35,855	41,178	$ 33.38	$ 31.13	$ 19.07	$1,237,376	$1,116,333	$ 785,261

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[1] Compared with Jan. 1, 1914.

[2] Based on census numbers on Apr. 15 and the Department of Agriculture's estimated farm value per head Jan. 1, 1910.

SHEEP.

Estimated number on farms, and value, January 1, 1915, with comparisons.

State	Number (000 omitted)				Value per head, Jan. 1			Total value Jan. 1 (000 omitted)		
	Jan. 1, 1915		Jan. 1, 1914	Apr. 15, 1910 (census)	1915	1914	1910	1915	1914	1910[2]
	Per cent.[1]	Total								
Maine	93	165	177	206	$ 4.50	$ 4.30	$ 3.70	$ 742	$ 761	$ 762
New Hampshire	97	38	39	44	4.90	4.40	3.70	186	172	163
Vermont	95	105	111	119	5.10	4.80	4.00	536	533	476
Massachusetts	97	30	31	33	5.60	5.30	4.20	168	164	139
Rhode Island	96	7	7	7	5.20	5.40	4.20	36	38	29
Connecticut	96	19	20	22	5.70	5.40	4.70	108	108	103
New York	97	849	875	930	5.80	5.40	5.00	4,924	4,725	4,650
New Jersey	100	31	31	31	6.00	5.60	5.20	186	174	161
Pennsylvania	99	831	839	883	5.30	4.90	4.80	4,404	4,111	4,238
Delaware	100	8	8	8	5.30	5.10	4.60	42	41	37
Maryland	100	223	223	237	5.20	5.00	4.70	1,160	1,115	1,114
Virginia	98	720	735	805	4.50	4.50	3.90	3,240	3,308	3,140
West Virginia	101	796	788	910	4.50	4.30	4.30	3,582	3,388	3,913
North Carolina	100	177	177	214	3.30	3.20	2.60	584	566	556
South Carolina	97	32	33	38	2.60	2.60	2.40	83	86	91
Georgia	98	163	166	188	2.30	2.10	2.20	375	349	414
Florida	101	119	118	114	2.20	1.90	2.00	262	224	228
Ohio	100	3,263	3,263	3,909	4.70	4.30	4.80	15,336	14,031	18,763
Indiana	90	1,114	1,268	1,337	5.40	4.90	5.20	6,016	6,066	6,952
Illinois	95	935	984	1,060	5.40	5.00	5.30	5,049	4,920	5,618
Michigan	96	2,033	2,118	2,306	5.00	4.60	4.70	10,165	9,753	10,838
Wisconsin	99	781	789	930	5.00	4.70	4.50	3,905	3,708	4,185
Minnesota	99	564	570	638	4.60	4.40	4.00	2,594	2,508	2,552
Iowa	100	1,249	1,249	1,146	5.60	5.30	5.30	6,994	6,620	6,074
Missouri	95	1,490	1,568	1,811	5.00	4.20	4.40	7,450	6,586	7,968
North Dakota	90	250	278	293	4.50	4.20	4.00	1,125	1,168	1,172
South Dakota	103	636	617	611	4.50	4.00	4.00	2,862	2,468	2,444
Nebraska	100	374	374	294	4.80	4.50	4.40	1,795	1,683	1,294
Kansas	100	316	316	272	4.90	4.50	4.70	1,548	1,422	1,278
Kentucky	97	1,229	1,267	1,363	4.20	4.20	4.00	5,162	5,321	5,452
Tennessee	98	674	688	795	3.70	3.40	3.40	2,494	2,339	2,703
Alabama	96	119	124	143	2.30	2.40	2.00	274	298	286
Mississippi	103	208	202	195	2.20	2.30	1.90	458	465	370
Louisiana	100	180	180	178	2.20	2.20	1.90	396	396	338
Texas	103	2,114	2,052	1,809	3.20	2.90	2.90	6,765	5,951	5,246
Oklahoma	101	76	75	62	4.20	4.00	3.30	319	300	205
Arkansas	105	130	124	144	2.60	2.60	2.30	338	322	331
Montana	102	4,379	4,293	5,381	4.40	3.70	4.20	19,268	15,884	22,600
Wyoming	99	4,427	4,472	5,397	4.70	4.10	4.40	20,807	18,335	23,747
Colorado	105	1,751	1,668	1,426	4.40	3.70	3.80	7,704	6,172	5,419
New Mexico	110	3,340	3,036	3,347	3.50	3.00	2.90	11,690	9,108	9,706
Arizona	110	1,761	1,601	1,227	4.00	3.60	3.70	7,044	5,764	4,540
Utah	105	2,068	1,970	1,827	4.50	3.90	4.10	9,306	7,683	7,491
Nevada	101	1,532	1,517	1,155	4.90	4.50	3.70	7,507	6,826	4,274
Idaho	102	3,041	2,981	3,011	4.70	4.20	4.70	14,293	12,520	14,152
Washington	108	546	506	476	4.80	4.40	3.90	2,621	2,226	1,856
Oregon	96	2,563	2,670	2,699	4.50	3.90	3.70	11,534	10,413	9,986
California	98	2,500	2,551	2,417	4.50	3.80	3.30	11,250	9,694	7,976
United States	100.5	49,956	49,719	52,448	$ 4.50	$ 4.04	$ 4.12	$ 224,687	$ 200,803	$ 216,030

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[1] Compared with Jan. 1, 1914.

[2] Based on census numbers on Apr. 15 and the Department of Agriculture's estimated farm value per head Jan. 1, 1910.

SWINE.

Estimated number on farms, and value, January 1, 1915, with comparisons.

State	Number (000 omitted)				Value per head, Jan. 1			Total value Jan. 1 (000 omitted)		
	Jan. 1, 1915		Jan. 1, 1914	Apr. 15, 1910 (census)	1915	1914	1910	1915	1914	1910[2]
	Per cent.[1]	Total								
Maine	98	95	97	87	$ 15.70	$ 15.80	$ 11.50	$ 1,492	$ 1,533	$ 1,000
New Hampshire	101	52	51	45	14.00	14.80	11.50	728	755	518
Vermont	102	108	106	95	13.00	14.10	10.00	1,404	1,495	950
Massachusetts	102	108	106	103	15.50	14.50	11.50	1,674	1,537	1,184
Rhode Island	104	15	14	14	13.50	15.20	12.50	202	213	175
Connecticut	101	58	57	52	15.50	16.30	12.50	899	929	650
New York	102	768	753	666	14.30	14.50	11.50	10,982	10,918	7,659
New Jersey	102	161	158	147	14.00	13.60	12.00	2,254	2,149	1,764
Pennsylvania	105	1,186	1,130	978	13.50	13.80	9.50	16,011	15,594	9,291
Delaware	103	60	58	49	10.20	10.30	8.70	612	597	426
Maryland	105	349	332	302	9.70	10.50	8.90	3,385	3,486	2,688
Virginia	110	956	869	798	7.90	8.30	6.50	7,552	7,213	5,187
West Virginia	102	374	367	328	9.60	10.10	7.70	3,590	3,707	2,526
North Carolina	112	1,525	1,362	1,228	8.20	9.00	7.20	12,505	12,258	8,842
South Carolina	105	819	780	665	8.60	9.10	7.20	7,043	7,098	4,788
Georgia	105	2,042	1,945	1,784	8.00	8.20	7.00	16,336	15,949	12,488
Florida	105	949	904	810	6.00	6.00	4.80	5,694	5,424	3,888
Ohio	105	3,640	3,467	3,106	11.20	11.30	10.70	40,768	39,177	33,234
Indiana	105	4,167	3,969	3,614	10.30	10.30	10.00	42,920	40,881	36,140
Illinois	100	4,358	4,358	4,686	10.30	10.80	10.90	44,887	47,066	51,077
Michigan	106	1,392	1,313	1,246	10.90	12.30	10.50	15,173	16,150	13,083
Wisconsin	110	2,255	2,050	1,809	12.00	13.00	11.80	27,060	26,650	21,346
Minnesota	120	1,716	1,430	1,520	12.50	14.00	11.50	21,450	20,020	17,480
Iowa	125	8,720	6,976	7,546	11.00	12.60	11.30	95,920	87,898	85,270
Missouri	100	4,250	4,250	4,438	8.10	8.50	7.90	34,425	36,125	35,060
North Dakota	150	642	428	332	11.80	13.20	11.00	7,576	5,650	3,652
South Dakota	115	1,195	1,039	1,010	11.00	11.30	11.10	13,145	11,741	11,211
Nebraska	118	3,809	3,228	3,436	10.90	11.80	11.00	41,518	38,090	37,796
Kansas	113	2,656	2,350	3,000	10.10	10.00	10.00	26,826	23,500	30,000
Kentucky	105	1,582	1,507	1,492	7.20	7.70	6.80	11,390	11,604	10,146
Tennessee	108	1,501	1,390	1,388	7.80	8.50	6.50	11,708	11,815	9,022
Alabama	105	1,559	1,485	1,267	7.80	8.50	6.00	12,160	12,622	7,602
Mississippi	105	1,540	1,467	1,292	7.20	8.10	5.50	11,088	11,883	7,106
Louisiana	101	1,412	1,398	1,328	7.70	8.00	5.50	10,872	11,184	7,304
Texas	110	2,880	2,618	2,336	9.00	8.60	6.60	25,920	22,515	15,418
Oklahoma	105	1,420	1,352	1,839	8.20	8.40	7.70	11,644	11,357	14,160
Arkansas	105	1,573	1,498	1,519	6.50	7.40	4.80	10,224	11,085	7,291
Montana	150	276	184	99	10.80	11.90	10.10	2,981	2,190	1,000
Wyoming	125	64	51	34	11.40	12.40	8.50	730	632	289
Colorado	125	256	205	179	10.50	10.50	9.50	2,688	2,152	1,700
New Mexico	130	73	56	46	9.80	10.10	8.50	715	566	391
Arizona	130	31	24	17	12.00	9.60	9.50	372	230	162
Utah	115	98	85	64	10.20	10.90	9.00	1,000	926	576
Nevada	110	36	33	23	11.60	12.60	9.00	418	416	207
Idaho	130	328	252	178	10.00	10.70	8.70	3,280	2,696	1,549
Washington	115	327	284	206	11.10	12.70	9.40	3,630	3,607	1,936
Oregon	120	360	300	218	9.50	11.00	8.20	3,420	3,300	1,788
California	110	877	797	767	10.50	10.50	8.20	9,208	8,368	6,289
United States	109.6	64,618	58,933	58,186	$ 9.87	$ 10.40	$ 9.17	$ 637,479	$ 612,951	$ 533,309

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[1] Compared with Jan. 1, 1914.

[2] Based on census numbers on Apr. 15 and the Department of Agriculture's estimated farm value per head Jan. 1, 1910.

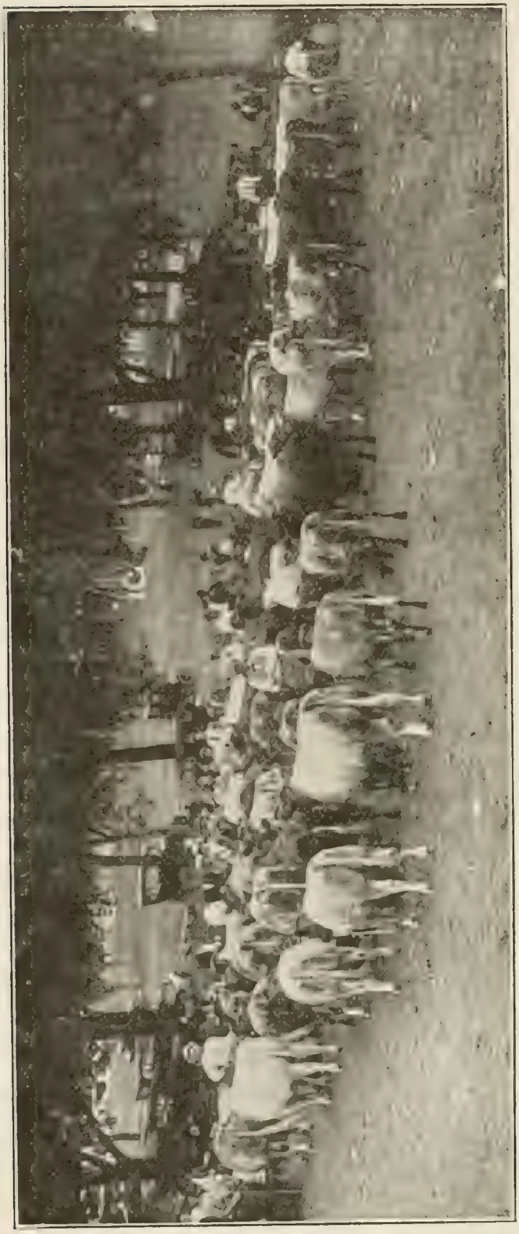
REPORTS OF LAND SALES IN IOWA COUNTIES.

Figures are herewith presented showing land sales in Iowa counties. This information was collected through the courtesy of the county recorders. The Department of Agriculture forwarded blanks to the county recorders asking them that they furnish thereon a list of fifty or more farm sales, a few from each township in the county, giving the township, part of section, total acreage and the consideration named in the transfer. Transfers of city property or of small tracts of land adjoining the city or transfers where the full consideration was not given were excluded. The period covered is from January 1 to December 31, 1914, except in a few instances where sales made during the early part of 1915 were included. In some instances only a comparatively few transfers were reported. A few counties did not report. The figures follow:

County	No. of transfers reported	Total acreage	Total consideration named in transfer	Value per acre
Adair	50	5,613	$ 704,231.00	$ 125.00
Adams	49	5,174	511,411.00	99.00
Allamakee	42	4,744	292,959.00	62.00
Appanoose	41	3,672	313,862.00	86.00
Audubon	45	5,935	837,011.00	141.00
Benton	63	6,447	110,889.00	170.00
Black Hawk	114	13,263	1,855,013.00	140.00
Boone	51	4,050	667,047.00	165.00
Bremer	62	5,770	671,349.00	116.00
Buchanan	50	4,979	643,220.00	129.00
Buena Vista	58	6,915	964,467.00	139.00
Butler	50	6,140	754,957.00	123.00
Calhoun	49	6,191	895,919.00	145.00
Carroll	50	5,792	891,666.00	152.00
Cass	54	5,778	776,757.00	134.00
Cedar	42	5,289	795,451.00	150.00
Cerro Gordo	26	4,060	537,587.00	132.00
Cherokee	72	9,607	1,255,266.00	130.00
Chickasaw	17	1,680	205,750.00	122.00
Clarke	46	5,781	571,973.00	98.00
Clay	56	8,212	1,064,957.00	130.00
Clayton	35	3,236	343,868.00	106.00
Clinton	24	3,262	466,483.00	143.00
Crawford	41	4,182	534,166.00	128.00
Dallas	50	5,190	783,951.00	151.00
Davis	54	5,413	430,600.00	80.00
Decatur	43	4,667	362,020.00	78.00
Delaware	40	4,531	557,302.00	123.00
Des Moines	41	7,217	575,360.00	80.00
Dickinson	55	7,424	807,907.00	109.00
Dubuque	26	3,821	509,255.00	133.00
Emmet	28	4,928	523,491.00	106.00
Fayette	52	4,416	491,125.00	111.00
Franklin	----------	----------	----------	----------
Floyd	50	6,647	794,293.00	119.00
Fremont	29	2,713	366,950.00	135.00
Greene	65	9,480	1,340,450.00	141.00
Grundy	63	7,546	1,270,177.00	170.00
Guthrie	58	5,201	627,123.00	121.00
Hamilton	----------	----------	----------	----------
Hancock	60	12,489	1,088,055.00	87.00
Hardin	60	6,606	996,917.00	151.00
Harrison	51	4,844	500,202.00	103.00
Henry	42	4,582	649,817.00	142.00
Howard	28	3,169	314,739.00	99.00

REPORTS OF LAND SALES—Continued

County	No. of transfers reported	Total acreage	Total consideration named in transfer	Value per acre
Humboldt	100	14,634	1,934,568.00	132.00
Ida	------	------	------	------
Iowa	60	4,958	696,453.00	141.00
Jackson	37	4,198	335,594.00	80.00
Jasper	31	3,454	433,625.00	134.00
Jefferson	55	5,772	734,875.00	127.00
Johnson	------	------	------	------
Jones	65	7,914	1,077,729.00	136.00
Keokuk	105	9,028	1,222,113.00	135.00
Kossuth	33	5,028	475,789.00	95.00
Lee	10	993	93,581.00	94.00
Linn	38	3,471	507,898.00	146.00
Louisa	38	3,966	462,978.00	102.00
Lucas	50	4,403	382,142.00	87.00
Lyon	49	9,497	1,237,626.00	130.00
Madison	80	9,808	1,083,987.00	111.00
Mahaska	42	4,321	666,260.00	154.00
Marion	28	1,915	213,795.00	112.00
Marshall	57	6,439	1,022,640.00	159.00
Mills	58	4,734	583,157.00	123.00
Mitchell	58	7,324	767,816.00	105.00
Monona	9	1,046	110,139.00	105.00
Monroe	50	4,751	342,635.00	72.00
Montgomery	53	6,540	916,615.00	140.00
Muscatine	26	2,225	264,156.00	119.00
O'Brien	67	10,198	1,487,196.00	146.00
Osceola	54	9,076	1,080,801.00	119.00
Page	22	2,086	279,047.00	134.00
Palo Alto	47	7,161	803,108.00	112.00
Plymouth	50	6,361	930,125.00	146.00
Pocahontas	28	4,142	618,178.00	149.00
Polk	42	3,785	465,310.00	123.00
Pottawattamie	57	6,195	759,184.00	123.00
Poweshiek	53	6,448	897,870.57	139.00
Ringgold	79	9,723	859,993.00	88.00
Sac	51	5,206	727,350.00	139.00
Scott	33	3,387	314,092.00	93.00
Shelby	50	5,579	780,044.00	140.00
Sioux	44	5,037	860,094.00	171.00
Story	------	------	------	------
Tama	46	4,478	760,241.00	147.00
Taylor	62	5,899	612,223.00	103.00
Union	52	6,154	622,036.00	101.00
Van Buren	52	4,915	408,199.00	83.00
Wapello	55	5,621	705,430.00	125.00
Warren	50	5,666	597,050.00	105.00
Washington	104	10,710	1,427,289.00	133.00
Wayne	------	------	------	------
Webster	64	6,510	889,093.00	137.00
Winnebago	49	6,592	629,609.00	95.00
Winneshiek	37	3,911	344,366.00	88.00
Woodbury	76	9,914	1,125,944.00	113.00
Worth	53	5,719	641,515.00	112.00
Wright	49	5,817	742,196.00	126.00



Thirteen Young Herds of Shorthorns at the 1914 Iowa State Fair and Exposition.

PART XIII

Report of Agricultural Conditions by County and District Agricultural Societies in Iowa, 1914

ADAIR.

FRED D. MARTIN, GREENFIELD, SEPTEMBER 28, 1914.

General Condition of Crops and Season—Fairly good. Season dry, generally.

Corn—Fairly good.

Oats—Twenty to forty bushels; fair.

Wheat—Both spring and winter wheat very poor.

Rye—Poor.

Barley—Poor.

Flax—None.

Buckwheat—None.

Millet—Fair; three-fourths crop.

Sorghum—Good.

Timothy—Poor.

Clover—Fair.

Prairie Hay—Fair.

Potatoes—One-third crop, but of good quality.

Vegetables—Generally poor.

Apples—Almost a failure.

Other Fruits—Fair.

Cattle—Not as many as usual, but they were sold off on account of the scarcity of water.

Horses—Good and doing well.

Swine—Fair.

Sheep—About an average.

Poultry—Good.

Bees—Not a good year for bees on account of drouth.

Drainage—Too dry.

Lands—Advancing in price and rents going up.

Report of Fair—Held September 8-10, 1914. Weather conditions bad, but, under the circumstances, we came out in good shape. The exhibits were good, races very good, attractions the best we ever had, and the public was well pleased.

ADAMS.

F. C. REESE, CORNING.

Corn—Good half crop; probably average thirty bushels per acre.

Oats—Good crop; above the average.

Wheat—Good.

Sorghum—Fair.

Timothy—Poor.

Prairie Hay—None.

Other Grains and Grasses—Two cuttings of alfalfa; fair to good.

Potatoes—Very poor; about one-eighth of a crop.

Vegetables—Poor.

Apples—Poor; very few.

Other Fruits—Very poor, except peaches.

Cattle—Below the average in number.

Horses—Above the average in number.

Swine—Young stuff comes close to an average.

Sheep—About an average.

Poultry—Normal.

Bees—No change.

Drainage—Not much being done this year.

Other Industries—None.

Lands—Steady to higher.

Report of Fair—Held July 20-25, 1914. Attendance satisfactory and the fair, as a whole, was the best we have ever had.

ALLAMAKEE.

GEO. S. HALL, WAUKON.

General Condition of Crops and Season—Generally very good.

Corn—Much better than the average; about fifty bushels to the acre, and the quality is very good.

Oats—Rather poor quality, as the heat and rust hurt it badly. I think about an average yield.

Wheat—Very little wheat grown in this county. The quality was very good and the yield from eighteen to twenty-five bushels per acre.

Rye—Just a small amount raised, but the quality was good.

Barley—A medium crop, the hot winds damaging it to some extent.

Flax—Very little raised.

Buckwheat—Grows very good in this county, but there is but a limited acreage.

Millet—But very little raised this season.

Sorghum—Excellent.

Timothy—Very good this year, a large amount being cut for seed.

Clover—Excellent. About two tons to the acre, and there is a great deal being cut for seed.

Other Grains and Grasses—Lots of blue grass.

Potatoes—Medium yield; very good quality.

Vegetables—Superior quality.

Apples—None to speak of.

Other Fruits—An abundance of wild and tame grapes; fair quality.

Cattle—This county boasts of some of the best cattle in the state. There is a shortage just at present, but the quality is good.

Horses—A great many horses and of excellent quality.

Swine—A nice lot of swine and of the best quality. No disease at present.

Sheep—This industry is on the increase.

Poultry—A thriving industry in this county.

Bees—A good crop of honey reported this year.

Drainage—Natural drainage.

Other Industries—We have an iron mine in this county which is operated successfully.

Lands—Generally rolling and of the very best quality. Land is selling all the way from $25 to $250 per acre.

Report of Fair—Held August 18th-21st, inclusive. We had fine weather. good exhibits and a good attendance.

APPANOOSE.

J. N. WILLET, CENTERVILLE, OCTOBER 1, 1914.

Corn—A good crop on the high land, but only of fair quality.

Oats—About one-half crop; quality good.

Wheat—Not a large acreage, but the yield was heavy and quality good.

Rye—Good.

Barley—None.

Flax—None.

Buckwheat—Very little raised.

Millet—Heavy crop, but damaged by September rains.

Sorghum—Good.

Timothy—Light.

Clover—Fair.

Prairie Hay—But little grown.

Potatoes—Almost a failure on account of the dry, hot weather.

Vegetables—Good.

Apples—Very scarce.

Other Fruits—Light crop.

Cattle—Not so many as formerly, but in good condition.

Horses—Plentiful; prices low.

Swine—A nice lot of spring pigs. Some cholera.

Sheep—A fair supply.

Poultry—All farms are well stocked with poultry.

Bees—Scarce.

Drainage—Considerable tile being laid in the bottom land.

Other Industries—Coal mining is profitable.

Lands—Some farms are changing hands at good prices.

Report of Fair—No fair held this year.

AUDUBON.

H. A. NORTHRUP, AUDUBON, OCTOBER 26, 1914.

General Condition of Crops and Season—Good.

Corn—10 per cent better than last year, or better than we have had in the past ten years.

Oats—80 per cent.

Wheat—50 per cent.

Barley—75 per cent.

Timothy—90 per cent.

Clover—90 per cent.

Other Grains and Grasses—75 per cent; grass, 100 per cent.

Potatoes—80 per cent.

Vegetables—90 per cent.

Apples—None.

Other Fruits—50 per cent.

Cattle—70 per cent.

Horses—100 per cent.

Swine—100 per cent.

Sheep—50 per cent.

Poultry—100 per cent.

Lands—Normal.

Report of Fair—Held September 21st-24th, inclusive.

BENTON.

A. B. ALLEN, VINTON, OCTOBER 20, 1914.

General Condition of Crops and Season—Good.

Corn—Best corn crop we have had in years.

Oats—Yielded about thirty-five to forty bushels per acre. Quality good.

Wheat—Very small amount grown.

Rye—Good yield and quality.

Barley—Good yield, about forty to fifty bushels per acre.

Flax—Just a small amount grown.

Buckwheat—Very little grown.

Millet—Not much grown.

Sorghum—Very little grown.

Timothy—Very good.

Clover—Very good.

Prairie Hay—None.

Potatoes—Very small acreage; yield good.

Vegetables—Good.

Apples—Not very plentiful.

Cattle—Usual condition.

Horses—Usual condition.

Swine—Probably 40 per cent more than last year.

Sheep—Limited number in the county.

Poultry—Good.

Bees—Not much attention given to this industry.

Drainage—Good.

Lands—Steadily increasing in value.

Report of Fair—Held September 7th-10th, inclusive. Rained every day.

BLACK HAWK.

H. S. STANBERY, CEDAR FALLS, OCTOBER 27, 1914.

General Condition of Crops and Season—Some crops a little below the average, but general conditions are fair. The season was wet during the early spring and very dry during the summer.

Corn—Below average.

Oats—Average crop.

Wheat—Fair.

Rye—Fair.

Barley—Fair.

Flax—None grown.

Buckwheat—Poor.

Millet—Poor.

Sorghum—Good.

Timothy—Very good.

Clover—Very good, but short on seed.

Prairie Hay—Good.

Other Grains and Grasses—A little short on account of dry weather.

Potatoes—Very poor.

Vegetables—Very poor.

Apples—None at all.

Other Fruits—Some of the early fruits were fair.

Cattle—Beef cattle situation improving. Progress and improvement in the number of dairy cattle rapidly increasing.

Horses—Average condition and number about normal.

Swine—An improvement over last year by reason of the fact that we have no cholera this year.

Sheep—Few in the county.

Poultry—About average.

Bees—Season not very satisfactory.

Drainage—Not very much drainage work being done this fall, as compared with other years.

Other Industries—Manufacturing seems to be on a very staple basis. No very noticeable effect of the stringency in the money market throughout the county.

Lands—Continúe to advance in price, but not so many sales as the two previous years.

Report of Fair—The Cedar Valley District Fair was held at Cedar Falls on September 19th-25th, inclusive. We had good weather, a large attendance, good exhibits, and, generally, the fair was successful and the future is promising.

BLACK HAWK.

A. A. BURGER, CEDAR FALLS, OCTOBER 27, 1914.

General Condition of Crops and Season—Some crops a little below the average, but general conditions are very fair. The season was wet in the early spring and very dry during the summer.

Corn—Below the average.

Oats—Average crop.

Wheat—Fair.

Rye—Fair.

Barley—Fair.

Flax—None grown.

Buckwheat—Poor.

Millet—Poor.

Sorghum—Good.

Timothy—Very good.

Clover—Very good, but short on seed.

Prairie Hay—Good.

Other Grains and Grasses—Grains a little short on account of dry weather, but grasses during early part of the season were fine.

Potatoes—Very poor.

Vegetables—Very poor.

Apples—None at all.

Other Fruits—Some of the early fruits fair.

Cattle—Beef cattle situation improving. Improvement and progress in number of dairy cattle rapidly increasing.

Horses—Average condition and about the normal number.

Swine—Improvement on last year in freedom from hog cholera. Some of the herds affected, but, on the whole, the disease seems to be checked, vaccination becoming a more common practice.

Sheep—Few in the county; condition fair.

Poultry—Poultry about the average.

Bees—Season not very satisfactory.

Drainage—Not very much drainage work being done as compared with other years.

Lands—Advancing in price but sell much slower than in the last two years.

Report of Fair—Iowa Dairy Congress held October 12th-18th, inclusive. On account of the rainy weather during the entire week the attendance was not what it should have been. In point of exhibits, quality and number of cattle and other attractions and displays the fair was a success. From the very nature of the association there can be no question of its tremendous money value to agricultural interests of this section.

BREMER.

J. Q. LAUER, WAVERLY, OCTOBER 7, 1914.

General Condition of Crops and Season—Good.

Corn—Good; yielding an average of forty bushels.

Oats—Good, some rust.

Wheat—Not much raised.

Rye—Good.

Barley—I know of none.

Flax—None.

Buckwheat—Fair crop but not much raised.

Millet—Good but not much raised.

Sorghum—Good but not much raised.

Timothy—Spotted; three-fourths crop.

Clover—Average crop.

Prairie Hay—None.

Other Grains and Grasses—Alfalfa good in some places.

Potatoes—Good crop.

Vegetables—Good.

Apples—None.

Other Fruits—Average.

Cattle—No disease and cattle will go into winter in fine condition.

Horses—All horses and colts in good condition. Apparently not many for sale.

Swine—Largest display we have ever had at the fair. Cholera has been bad in some parts of the county although there is not much reported at present.

Sheep—Very few sheep raised.

Poultry—More than last year and no disease reported.

Bees—Quality of honey is fine but I am unable to state as to quantity.

Drainage—This county is well tiled and no drainage ditches are required.

Other Industries—Prosperous.

Lands—Generally rolling. Selling as high as $200 an acre.

Report of Fair—Held September 7th-11th inclusive. The weather was not good but we had the largest display of exhibits that we have ever had. Outside of our building expenses were made over $2,000.

BOONE.

W. C. TRELOAR, OGDEN, OCTOBER 30, 1914.

General Condition of Crops and Season—Season was generally good except there was a drouth during July and August.

Corn—Acreage about the same as 1913; yield fully as good and quality better.

Oats—About 80 per cent of the 1913 crop. Quality not as good.

Wheat—Acreage about the same as 1913; average yield eighteen bushels per acre.

Rye—None grown here.

Barley—Scarcely any raised here.

Flax—None grown here.

Buckwheat—I know of none.

Millet—Scarcely any grown.

Sorghum—I know of none.

Timothy—About three-fourths crop. None cut for seed.

Clover—Hay 85 per cent of average crop. None cut for seed.

Prairie Hay—Scarcely any here.

Potatoes—About an average crop.

Apples—None.

Other Fruits—Scarce.

Cattle—About 80 per cent of the average.

Horses—About the same as last year.

Swine—Nice lot of spring pigs and no cholera reported.

Sheep—Very few in the county.

Poultry—Average crop.

Drainage—Not as much being done as usual.

Lands—Increased about 20 per cent over 1913.

Report of Fair—Held August 17th-19th, inclusive, at Ogden.

BUCHANAN.

PERRY J. MILLER, INDEPENDENCE, OCTOBER 30, 1914.

General Condition of Crops and Season—Crops good and season fair.

Corn—Fair crop; yield from twenty to seventy-five bushels per acre; quality good.

Oats—Good; yielding from thirty to fifty bushels per acre.

Wheat—None raised.

Rye—Very little raised but fair crop.

Barley—Very little raised.

Flax—None.

Buckwheat—Good crop.

Millet—Good crop.

Sorghum—Very little raised.

Timothy—Good crop; yielding from one and a half to two tons per acre.

Clover—Same as timothy.

Prairie Hay—Good crop.

Potatoes—Light crop.

Vegetables—Good crop.

Apples—None.

Other Fruits—Good crop.

Cattle—All cattle in fine condition; no disease.

Horses—Good.

Swine—A large number of spring pigs and they are in good condition.

Sheep—More sheep in the county this year than ever before.

Poultry—Lots of poultry of all kinds and in good condition.

Bees—Very few bees in the county.

Drainage—Lots of tile being put in.

Lands—Increasing in price and selling from $100 to $250 per acre.

Report of Fair—Held August 18-21, 1914. Fine attendance and good weather.

BUENA VISTA.

W. J. SIEVERS, ALTA, SEPTEMBER 25, 1914.

General Condition of Crops and Season—The best crops we have had in years. The weather in the early spring was ideal for sowing small grain and the corn was put in the ground in good season. Rains came at the right time.

Corn—A little backward on account of fall rains and if the frost will hold off for a short time the yield will be very large and would estimate from fifty to seventy-five bushels per acre.

Oats—An excellent yield, with an average of fifty bushels per acre.

Wheat—Very little raised but quality and yield good.

Rye—Very small acreage.

Barley—Fully up to the average and better if anything.

Flax—None that I know of in the county.

Buckwheat—I know of none.

Millet—An excellent yield.

Sorghum—Good quality; small acreage.

Timothy—A fine stand.

Clover—A good crop and with fall rains will make excellent crop for next year.

Prairie Hay—Very little prairie hay left in this county.

Other Grains and Grasses—Very good.

Potatoes—Plentiful and a good crop. This community is noted for the large number of potatoes grown and this crop has been found very profitable.

Vegetables—Good yield and good quality.

Apples—Very scarce this year.

Other Fruits—Cherries abundant and plums a fair yield.

Cattle—Have done very well, owing to the abundance of grass and feed.

Horses—More heavy horses are being raised every year owing to the good demand.

Swine—Not so many raised this year, owing to the prevalence of cholera last year, which wiped out a large number of herds. However, this year will find us in better condition than last year.

Sheep—Only a small number raised.

Poultry—A profitable industry.

Bees—Not very flourishing in this community.

Drainage—There is more drainage being done every year where it is needed and this is putting the land in excellent condition.

Other Industries—Strictly a farming community. Storm Lake has a corn canning factory which is doing a very large business.

Lands—Selling from $150 to $225 per acre.

Report of Fair—Held August 18th-21st inclusive. The weather was ideal and the crowds large. A total of 10,500 paid admissions and the exhibits were fairly well filled in all departments. Our entries were a little lighter than in former years but that is something that comes and goes. From a financial standpoint, it was one of the best fairs ever held at Alta and the Association will clear a nice little sum of money.

BUTLER.

W. C. SHEPARD, ALLISON, OCTOBER 14, 1914.

General Condition of Crops and Season—The season was wet and cold in the spring, dry in the summer and very wet in the fall. There has not been a killing frost so far this fall. The general condition of all crops is above the average.

Corn—A good crop. Corn matured early and would have been ready for the crib now had the weather this fall been more favorable.

Oats—Generally below the average in weight and yield. Straw was plentiful.

Wheat—There has been but very little wheat raised in this county.

Rye—Was a fairly good yield but there is not much raised here.

Barley—Yielded fairly good but there is only a small acreage in this county.

Flax—I know of none.

Buckwheat—Was a good crop but the fall season was too wet to reap it in good condition.

Millet—Very little grown in this county.

Sorghum—This has been a good year for sorghum but there is a small acreage.

Timothy—A very good crop and put up in good condition.

Clover—Same as timothy.

Prairie Hay—None left in the county.

Other Fruits—About the usual crop.

Cattle—About the same as usual. There is a good demand for cattle.

Horses—Average number. A fairly good demand. The large horses are more in demand.

Swine—Probably not so many as usual because of the prevalence of hog cholera in the county last fall.

Poultry—Increasing both as to number and quality.

Bees—I believe the number of stands is increasing.

Lands—Increasing in value and ranging from $100 to $225 per acre.

Report of Fair—Held September 15th-19th, inclusive. A fair attendance each day but the rainy weather prevented a large attendance. The people in general were satisfied with the fair and its management.

CALHOUN.

W. Q. STEWART, ROCKWELL CITY, OCTOBER 23, 1914.

General Condition of Crops and Season—Fairly good crops; early fall months too dry for corn in the southern part of the county.

Corn—Average twenty-five to forty bushels per acre.

Oats—Average thirty-five bushels but not of good quality.

Wheat—Not much grown. Winter wheat averaged from fifteen to twenty bushels.

Rye—Not any.

Barley—None to speak of.

Flax—I know of none.

Millet—Fair crop; not a large acreage.

Sorghum—Not any.

Timothy—Good. Yielded about one and a half tons per acre.

Clover—First crop yielded one ton to the acre; the second crop yielded one bushel of seed per acre.

Prairie Hay—Good.

Other Grains and Grasses—Fair.

Potatoes—Fair crop but not enough to supply home demand.

Vegetables—Good.

Apples—None to speak of.

Other Fruits—Medium.

Cattle—Poor.

Horses—Average number.

Swine—Average number; some cholera.

Sheep—Average number.

Poultry—Lots of poultry; no disease reported.

Bees—Not much doing.

Drainage—Nearly all tiled out.

Other Industries—Normal.

Lands—From $10 to $15 higher than a year ago.

Report of Fair—Held at Rockwell City, August 28th to September 1st, inclusive. All departments were well filled. Weather was extremely hot and the attendance not very large on that account.

CALHOUN.

E. G. SWISHER, MANSON, SEPTEMBER 30, 1914.

General Condition of Crops and Season—Good.

Corn—Will average about forty bushels per acre.

Oats—Forty bushels per acre.

Wheat—Seventeen bushels per acre.

Rye—Very little grown.

Barley—Thirty-five bushels per acre.

Flax—Very little.

Buckwheat—Very little grown.

Millet—Only a small acreage.

Sorghum—I know of none.

Clover—Good.

Timothy—Good; about two tons per acre.

Prairie Hay—Light.

Other Grains and Grasses—Very little.

Potatoes—Good.

Vegetables—Good.

Apples—None.

Other Fruits—Fair.

Cattle—About 80 per cent.

Horses—About 100 per cent.

Swine—About 80 per cent. Lots of disease in the southeastern part of the county.

Sheep—Very few.

Poultry—Very good; about 100 per cent.

Bees—Very few.

Drainage—Good.

Other Industries—Good.

Lands—Values range from $175 to $225 per acre.

Report of Fair—Held at Manson on September 8th-11th, inclusive. Rained all week and we held the fair over until Saturday. The attendance was good and the exhibits were fine.

CARROLL.

PETER STEPHANY, CARROLL, OCTOBER, 1914.

General Condition of Crops and Season—Good.

Corn—Very good quality; little better than average crop.

Oats—Early oats a heavy crop; late oats average.

Wheat—Winter wheat good; spring wheat little less than average.

Barley—Fair crop.

Millet—Average crop.

Sorghum—Good crop.

Timothy—Big crop; both seed and hay.

Clover—Good crop.

Prairie Hay—Big crop.

Other Grains and Grasses—Good general average.

Potatoes—Early planted were good but the late ones were only fair.

Vegetables—Early ones good; late ones just fair.

Apples—No crop.

Other Fruits—Generally a good crop.

Cattle—In good condition.

Horses—In good condition.

Swine—In good condition; some cholera.

Sheep—Good.

Poultry—Extra good.

Drainage—Considerable work done during the year, both county and private.

Report of Fair—Best fair ever held. The attendance was only fair due largely to Ringling Brothers circus coming in on fair week.

CASS.

JOHN J. CURRY, ATLANTIC, OCTOBER 29, 1914.

Corn—80 per cent.

Oats—75 per cent.

Wheat—80 per cent.

Rye—None.

Sorghum—None.

Clover—85 per cent.

Potatoes—75 per cent.

Vegetables—65 per cent.

Other Fruits—65 per cent.

Cattle—80 per cent.

Horses—85 per cent.

Swine—75 per cent.

Sheep—70 per cent.

Poultry—85 per cent.

Bees—70 per cent.

Lands—Not much land changing hands.

Report of Fair—Held at Atlantic, September 14th-18th, inclusive. Bad weather; good exhibits and big crowds.

CASS.

D. P. HOGAN, MASSENA, SEPTEMBER 30, 1914.

General Condition of Crops and Season—Fair season.

Corn—About a half to two-thirds of a crop.

Oats—Good; a big crop.

Wheat—Fair crop.

Rye—None.

Barley—Very little.

Flax—None.

Buckwheat—None.

Millet—Not much grown but it made a fairly good crop.

Sorghum—A small acreage; a good crop.

Timothy—Light crop.

Clover—Light crop.

Prairie Hay—Very little.

Potatoes—Very light crop.

Vegetables—Early vegetables.

Apples—None.

Cattle—Fairly good supply; quite thin in flesh.

Horses—Good supply.

Swine—Good crop of pigs; very little cholera.

Sheep—Good supply and in good condition.

Poultry—Good supply.

Report of Fair—No fair this year.

CEDAR.

C. F. SIMMERMAKER, TIPTON, OCTOBER 1, 1914.

General Condition of Crops and Season—General condition very good.

Corn—A good average crop. Heavy winds and rain damaged the crop to some extent by blowing the corn down.

Oats—Fair crop; quality good.

Wheat—Very little raised.

Rye—An average crop.

Barley—Good to fair crop.

Buckwheat—Not much raised.

Millet—Good.

Sorghum—Very little raised.

Timothy—Medium crop.

Clover—Fair to good.

Prairie Hay—None.

Other Grains and Grasses—Grass and pastures good, especially during the fall.

Vegetables—Good.

Apples—Very scarce.

Other Fruits—Plenty of peaches, some pears and plenty of small fruit.

Cattle—Scarce and high.

Horses—Plenty of good horses. Prices fairly good.

Swine—Considerable disease. Average crop.

Sheep—Scarce.

Poultry—Plenty of poultry.

Bees—I am not in a position to report.

Drainage—Most of the land drained out.

Other Industries—Sweet corn is a very good crop. Butter and eggs are an important industry in this county.

Lands—Not many sales but prices are high, ranging from $150 to $250 per acre.

Report of Fair—Held September 8th-12th, inclusive. The weather was unfavorable and our attendance was not large. All departments were well filled and the afternoon program on Saturday was the best ever put on by the association. The association had a deficit of about $500.

CERRO GORDO.

ARTHUR PICKFORD, NORA SPRINGS, 1914.

General Condition of Crops and Season—All crops are good in this section and the season has been favorable with the exception of the drouth in July.

Corn—Yielding from fifty to seventy-five bushels per acre and the quality is fine. It is badly down in places.

Oats—Oats were free from blight and smut and of good quality.

Wheat—Spring wheat was of fair quality but a light yield, owing to the lack of stooling in the spring.

Barley—Good yield.

Flax—But little flax sown. Yields range from ten to thirteen bushels per acre.

Timothy—Not much cut for seed, but the hay crop was good.

Clover—A good crop of hay and the second crop is being cut for seed.

Prairie Hay—Very little left.

Potatoes—Yields are all the way from poor to very good, according to the conditions of plants when the rain came.

Vegetables—Garden truck was excellent.

Apples—None.

Other Fruits—All berries were in profusion and there were some plums and cherries.

Cattle—Scarce, but doing well. Good cows sell for from $50 to $75 each.

Horses—The demand is fair and the prices somewhat lower.

Swine—Very little cholera this year and hogs are doing well.

Sheep—Not increasing in numbers but are free from disease and bring good prices.

Poultry—A good year for young chicks. Prices are good.

Bees—Not a good year for honey. Very few colonies are kept.

Drainage—Many farmers are draining out the sloughs and wet parts of their farms.

Other Industries—No beets this year.

Lands—Increasing in value and range from $125 to $200 per acre, according to location and improvements.

Report of Fair—A very successful fair.

CHICKASAW.

F. D. GRIFFIN, NEW HAMPTON, OCTOBER 29, 1914.

General Condition of Crops and Season—Excellent.

Corn—Extra good.

Oats—Fair.

Wheat—Good; not much raised.

Rye—Good but not much raised.

Barley—Good but little grown.

Flax—Good but only a small acreage.

Buckwheat—Fair.

Millet—Good.

Sorghum—Not enough grown to report on.

Timothy—Good.

Clover—Good.

Prairie Hay—Good.

Other Grains and Grasses—Good.

Potatoes—Fair.

Vegetables—Good.

Apples—Small crop.

Other Fruits—Small crop.

Cattle—Good.

Horses—Excellent.

Swine—Good. Many lost by cholera.

Sheep—Good.

Poultry—Good.

Bees—Few handled.

Drainage—Fair and gaining in improvements.

Other Industries—Excellent.

Lands—Good and increasing in value.

Report of Fair—Held at New Hampton, September 14th-18th, inclusive, and held over one day on account of rain. We had rain nearly every day.

CHICKASAW.

C. W. AYERS, NASHUA, OCTOBER 15, 1914.

General Condition of Crops and Season—Good.

Corn—Good.

Oats—Fair yield; quality light.

Wheat—Very little raised.

Rye—Fair.

Barley—Very little grown.

Flax—Very little raised.

Buckwheat—Not much grown.

Millet—Good.

Sorghum—Not much grown.

Timothy—Good.

Clover—Good.

Prairie Hay—Good.

Other Grains and Grasses—Good.

Potatoes—Good.

Vegetables—Good.

Apples—None.

Other Fruits—Good.

Cattle—Good.

Horses—Good.

Swine—Good.

Sheep—Good.

Poultry—Good.

Bees—Very few.

Drainage—Natural drainage good.

Lands—Values increasing. Average, $150 per acre.

Report of Fair—Held at Nashua, September 8th-12th, inclusive. We had bad weather and the attendance was better than we anticipated.

CLAYTON.

HENRY LUEHSEN, GARNAVILLO, OCTOBER 21, 1914.

General Condition of Crops and Season—No complaint should be made in regard to crops or season in general.

Corn—A good yield; average about 85 per cent.

Oats—Good yield, but a great deal of it is not very heavy. The hot weather ripened it too soon.

Wheat—None raised.

Rye—Very little raised.

Barley—Not much raised, but the quality and yield are good.

Flax—None raised.

Sorghum—A good crop.

Timothy—A good all around crop.

Clover—A fair crop. A good deal of it cut for seed, but did not yield very good.

Prairie Hay—Average crop.

Other Grains and Grasses—A fair crop.

Potatoes—A big yield and good quality.

Vegetables—Never were better.

Apples—Almost a total failure.

Other Fruits—A good fair yield.

Cattle—A good paying business Many of our farmers have all pure bred stock and are making big money in the dairy business.

Horses—A fine lot of good horses.

Swine—Still the principal industry of this county. They are raised in large numbers and are of high grade stock.

Sheep—Not as many raised as in former years; the low price of wool is probably the cause.

Poultry—An industry that should receive more attention. A good many of our farmers have large numbers and they find them profitable.

Bees—Not paid very much attention.

Drainage—Natural.

Other Industries—Our farmers' creamery is the only industry here, outside of farming.

Lands—Going up, but not much for sale around here.

Report of Fair—Held at National on September 8th-11th, inclusive. The exhibits in Floral Hall were by far the largest in many years. The horse show was good and the cattle exhibit better than last year. The swine exhibit was not very large, due to the vaccination rule. We had some rain, but our attendance was fairly good. We held the fair over one day and this brought our attendance up.

CLAYTON.

R. W. SCHUG, STRAWBERRY POINT, OCTOBER 19, 1914.

General Condition of Crops and Season—Crops in general are above the average in yield and quality.

Corn—Above the average.

Oats—Above average.

Wheat—Very little grown here; quality good.

Rye—About the average.

Barley—Good acreage.

Flax—None grown.

Buckwheat—Very little grown.

Millet—None to speak of.

Sorghum—Good, but only a small acreage.

Timothy—Above the average.

Clover—Above the average.

Prairie Hay—Very little wild hay left.

Potatoes—Fair crop.

Vegetables—Average.

Apples—No apples to speak of.

Cattle—Mostly dairy cattle; few feeders.

Horses—About 5 per cent increase in number.

Swine—About the same as last year.

Report of Fair—Held September 1st-4th, inclusive. Largest receipts and attendance in thirty-five years.

CLAYTON.

MAX B. BISHOP, ELKADER, OCTOBER 13, 1914.

General Condition of Crops and Sesaon—The conditions during the year 1914 were unusually good, excepting for the hot weather and lack of rain during harvest.

Corn—Unusually good, average about sixty bushels to the acre.

Oats—Fair crop, about thirty bushels to the acre.

Wheat—Very good, about twenty bushels to the acre.

Rye—Fair.

Barley—Fair yield.

Flax—None grown.

Buckwheat—Not much raised.

Millet—None raised.

Timothy—Excellent.

Clover—Excellent.

Prairie Hay—Good.

Other Grains and Grasses—Exceptionally good.

Potatoes—Good; large yield.

Apples—Very scarce; poor yield.

Other Fruits—Good.

Cattle—Average condition.

Horses—Average condition and the usual number.

Swine—Same as horses.

Sheep—Usual condition.

Poultry—Average condition.

Bees—Good.

Report of Fair—Held at Elkader on September 2d-4th, inclusive. Exhibits in all departments very good, with the exception of the live stock, which was light. The fair was not a success financially, due to the fact that Gollmar Brothers circus and street fairs were in this locality during our fair week. Our program was pronounced the best we have ever had.

CLAY.

W. A. POSEY, SPENCER, OCTOBER 1, 1914.

General Condition of Crops and Season—This has been an exceptionally good year for crops. The spring was wet, yet the season opened early. Excepting for a short period beginning the last of July, we had plenty of moisture at all times. Corn ripened early and there were no frosts to speak of during September.

Corn—The ground was in good condition this spring and corn planting started early. Most of the corn was planted by the 25th of May. With the exception of about two weeks of dry weather in the middle of the season, the weather was favorable the entire year. On October 1st the late corn was well matured and we have had no frost. Corn is of excellent quality.

Oats—The season was a little too wet for ideal oat weather. Oats started out very rank and made a heavy growth of straw, but they lodged some and there was enough rust and smut to prevent more than a good average yield.

Wheat—Fall wheat that was properly seeded made a good crop. Spring wheat made about the average crop.

Rye—Rye did well and made a full average crop. It grew too rank for a record yield of grain.

Barley—Barley, like oats, grew too rank for the best crop, and the straw gave way at ripening time. Generally speaking, the yield was good.

Flax—We had a splendid season for flax. It grew tall and headed out well. Some splendid yields were reported and the flax was of good quality.

Buckwheat—There was very little buckwheat raised here.

Millet—The millet hay crop was exceptionally heavy, but the crop saved for seed did not fill extra well.

Sorghum—This was a good season for sorghum hay and the crop was very heavy.

Timothy—The timothy matured early and the crop was good. Both the hay and seed crop were above the average.

Clover—This was one of the best clover seasons that Clay county has ever known. Many cut two good hay crops. Others secured a good hay crop and a good seed crop. Those who seeded this season secured a good stand.

Prairie Hay—Some of the low hay lands were flooded in the spring and this made the crop on those lands late, but they produced a good crop. A full average crop was cut.

Other Grains and Grasses—This was a splendid season for alfalfa. Practically all the fields were cut three times, and some of them the fourth time. The spring seeding with the nurse crop, in nearly every case, made a catch, and every person who tried fall seeding according to directions secured a stand.

Potatoes—The few weeks' drouth in the summer stopped the potato growth and the crop is not heavy.

Vegetables—Early vegetables did well and it has been an exceptionally fine season for fall vegetables, especially tomatoes and cabbage.

Apples—Very few apples were raised in the county this year. The orchards did not bloom this spring.

Other Fruits—It has been a poor year for most fruits. There were a few plums and grapes.

Cattle—There has been nothing unusual in the cattle condition of the county. There are perhaps fewer cattle than the average.

Horses—There has been a very promising crop of colts raised in the county this year. Several colt shows which have been held in the different towns have added interest to the horse industry and have been a help to the owners of the best stallions.

Swine—The cold, wet spring caused some losses among the early pigs, but the increased number of sows kept and the success with late pigs gives us more pigs than common. There has been about 100 outbreaks of cholera in the county during the year, but prompt vaccination has kept the loss down to a very small amount.

Sheep—Clay county is well supplied with sheep this year and they have been yielding good profits.

Poultry—The spring was favorable to chicken raising and there must be more chickens in the county than common. I have heard of no contagious diseases this year.

Bees—There are very few hives of bees kept and the owners report little honey.

Drainage—This has been a splendid year for drainage. The heavy rains in the spring showed where more drainage was necessary and the farmers seemed to be ready to take up the work. Two large drainage ditches have been completed besides several smaller ditches. Much tiling has been done in the county this year.

Lands—Some land has been changing hands all year and the price has gradually increased. Land ranges from $100 to $200 per acre. Quite a number of well improved farms have sold for more than $160 per acre.

Report of Fair—The Clay County Fair and picnic was held September 17, 1914. All the expenses of the fair were raised by subscription, so everything was free. The day was ideal and we had a very large crowd and more stock than we had anticipated.

CLINTON.

G. H. CHRISTENSEN, DE WITT, OCTOBER 26, 1914.

General Condition of Crops and Season—Good.

Corn—Forty bushels per acre.

Oats—Fair crop; thirty to forty-five bushels per acre.

Wheat—Twenty to thirty bushels per acre; quality good.

Rye—Fair crop; not much raised.

Barley—None.

Buckwheat—None.

Timothy—Fair crop; small acreage.

Clover—Not much grown; fair crop.

Other Grains and Grasses—Good crop.

Potatoes—Not many raised; fair crop.

Vegetables—Good crop.

Apples—Not any this year.

Other Fruits—Fair crop.

Cattle—Feeders just beginning.

Horses—Good; many good horses.

Swine—Lots of good hogs. Not so much sickness as last year.

Sheep—Only a very few herds.

Poultry—Fine lot of poultry. Eggs are high.

Bees—No honey; a good many bees.

Drainage—Not much tiling this year.

Other Industries—None.

Lands—Selling from $150 to $250 per acre.

Report of Fair—A very rainy week. We ran behind in attendance about 8,000 people. We paid all premiums in full; also all expenses.

CRAWFORD.

O. M. CRISWELL, ARION, SEPTEMBER 22, 1914.

General Condition of Crops and Season—Good.

Corn—Very good; above the average.

Oats—Just fair; yield from twenty to forty bushels per acre.

Wheat—Winter wheat, twenty to thirty bushels per acre; spring wheat, from eight to twenty bushels per acre.

Rye—None to speak of.

Barley—Yielded from twenty to thirty bushels per acre.

Flax—None raised.

Buckwheat—None raised.

Millet—Good.

Sorghum—Very little grown.

Timothy—Just fair; hardly up to the average.

Prairie Hay—Very little in the county.

Potatoes—Good; I think, above the average.

Clover—Fall clover is fine.

Vegetables—Above the average.

Apples—None worth mentioning in this county.

Other Fruits—Good.

Cattle—Very scarce; not many being raised, but they are in good condition.

Horses—A goodly number of horses, and they are of good quality.

Swine—In this part of the county the hogs nearly all died last fall, consequently our stock of pigs is under the average in number. Have not heard of any cholera this year.

Sheep—Not many sheep in the county. Mostly shipped in for feeding purposes.

Poultry—I think poultry is above the average this season.

Bees—Very few are kept in this county.

Drainage—Very little drainage in this county.

Lands—Still increasing in value and ranging from $100 to $250 per acre, according to lay of land and location.

Report of Fair—Held September 8th-11th, inclusive. We held over one day on account of rain during most of the week. Had only a day and a half of good weather. However, we had a good attendance, and we think we would have had a record breaker if the weather had been good.

DAVIS.

MR. H. C. LEACH, BLOOMFIELD, SEPTEMBER 25, 1914.

General Condition of Crops and Season—Good.

Corn—Full average crop for this county; quality good and acreage above the average.

Oats—About one-half crop; quality fairly good. Acreage about an average.

Wheat—Small acreage; quality good.

Rye—Not much sown; quality good.

Barley—Not any.

Buckwheat—Not much raised this year..

Millet—Mostly late, and rains have damaged same quite a little.

Sorghum—Small acreage.

Timothy—Fair crop; quality fine; yield small. Not much seed saved this year.

Clover—Fine crop; excellent quality.

Prairie Hay—Not any.

Other Grains and Grasses—About average.

Potatoes—Fair crop; quality good.

Vegetables—Good; acreage larger than usual.

Apples—Almost a failure in this county; quality fair, but crop is short.

Other Fruits—Peaches plentiful and fine. Cherries and plums a light crop, but of good quality.

Cattle—Scarce. Not many feeders in the county. Most of our cattle are of the dairy breeds.

Horses—Lots of horses in the county; most of the draft breeds.

Swine—The county is pretty well stocked with hogs. They are doing well.

Sheep—About the usual number.

Poultry—About the average number. One of the best products of the county.

Bees—Not many in the county this year.

Drainage—Nothing special being done in this line.

Other Industries—None to speak of.

Lands—Real estate somewhat dull owing to the money market. Lands range in price from $65 to $200 per acre.

Report of Fair—Held September 8th-11th, inclusive. Owing to rain each day up until Friday the fair was continued over Saturday. The attendance was small until that day. Considering the weather the fair was a success.

DELAWARE.

J. C. SABIN, MANCHESTER, OCTOBER 8, 1914.

General Condition of Crops and Season—The season was dry and the crops average.

Corn—85 per cent.

Oats—50 per cent.

Wheat—Practically no acreage.

Rye—80 per cent.

Barley—75 per cent.

Flax—None.

Buckwheat—80 per cent.

Millet—Not any.

Sorghum—I know of none.

Timothy—75 per cent.

Clover—90 per cent.

Prairie Hay—80 per cent.

Potatoes—Early ones 50 per cent; late ones 90 per cent.

Apples—A failure.

Other Fruits—Very good.

Cattle—High and scarce. In good condition.

Horses—Plentiful. A good supply of young horses.

Swine—85 per cent. Very little cholera this fall.

Sheep—Very few.

Poultry—Plentiful.

Bees—Very few.

Drainage—Lots of tile being laid this year.

Lands—Range in price from $100 to $175 per acre.

Report of Fair—August 25th-28th, inclusive. Best fair ever held on the grounds. Bad weather made a poor attendance.

DICKINSON.

A. M. JOHNSON, JR., SPIRIT LAKE, OCTOBER 28, 1914.

General Condition of Crops and Season—Crops and season about average and normal with slight excess of moisture in early part of the season. It has been warm and dry the latter part of the season and the frost has been unusually late.

Corn—About the average crop and acreage; quality about average.

Oats—Below the average in yield and not generally as good quality as usual.

Wheat—About the average acreage and yield, probably below the normal in grade.

Rye—Very little raised.

Barley—Acreage below normal and quality light.

Flax—Less than the usual acreage. Yield reported good.

Buckwheat—No report.

Millet—Unusually large acreage and heavy yield.

Sorghum—Good yield but very little raised in this county.

Timothy—Heavy crop of hay and seed crop reported fair.

Clover—Very heavy yield of clover. More than usual cut for seed and the yield reported fair.

Prairie Hay—Heavy yield; acreage decreasing.

Other Grains and Grasses—None.

Potatoes—Yield and acreage about average.

Vegetables—Very satisfactory yield.

Apples—Very light crop; much below average.

Other Fruits—Lighter than usual except shrubbery fruit, which is reported about an average crop.

Cattle—Slightly less than the usual number. Condition generally good. Not so many being fed as usual.

Horses—About the usual number, and in good condition. A larger number of colts this year than last.

Swine—Below the average. Condition generally good.

Sheep—About the average number and in good condition.

Poultry—About average. More turkeys than usual.

Bees—Not many kept. Honey output about as usual.

Drainage—More than the usual amount of moisture in the ground throughout entire season. About the usual amount of tiling being done.

Lands—Not much activity in sale of lands but all sales made were at greatly advanced prices.

Report of Fair—Had a rainy week.

FAYETTE.

E. A. MC ILREE, WEST UNION, SEPTEMBER 24, 1914.

General Condition of Crops and Season—Unusually good.

Corn—The yield will be exceptionally large and the quality unusually good.

Oats—Not even in growth or quality this year. Some fields are exceptionally good, while others were badly affected with rust and straw.

Wheat—Not a large acreage in this county. Spring wheat has been coming into favor again but not very extensively. Winter wheat is not very largely grown but the crop was good.

Rye—Only a small acreage.

Barley—Not much grown but the quality was fine and the yield fair.

Flax—Very little grown.

Buckwheat—I know of none.

Millet—Raised only for the purpose of killing out the quack grass and for poultry food.

Sorghum—Is nearly a product of the past. It formerly was an important crop in this county.

Timothy—Was a good crop this year and the quality of seed produced was extra good. There is very little clear timothy raised.

Clover—Has done well this year where there was a stand. The acreage has been greatly reduced in the last three years through poor seeding.

Prairie Hay—Only a few small patches.

Other Grains and Grasses—Alfalfa is being experimented with in a small way, and wherever tried has been quite successful.

Potatoes—About a half crop. The quality is good and there is no rot or scab.

Vegetables—Excellent. Mostly grown for home use.

Apples—A very short crop but of good quality. Not more than ten per cent of the usual yield matured.

Other Fruits—Were of fine quality and good yield, excepting grapes, which were a light crop.

Cattle—Have been unusually free from disease and are in extra good condition. Pastures have been exceptionally good.

Horses—Have been unusually free from disease and there has been a large crop of spring colts. Prices have held up extra well in view of the large increase in the number of horses and colts on the farm.

Swine—Have suffered considerably from cholera in some localities. Only an average lot of spring pigs and they are being rapidly pushed for market on account of high prices and the stock on hand next year is likely to be considerably reduced.

Sheep—Not many in the county although there are a number of small flocks. There has been no disease and the returns have been satisfactory.

Poultry—Free from disease throughout the county and on account of the favorable season there has been an extra large crop of young stuff. Prices have been very satisfactory.

Bees—Which have nearly disappeared from the county on account of the bee disease prevailing for a number of years, are slowly coming back. It has been a poor year for honey, but the stock on hand appears to be healthy.

Drainage—Has increased very rapidly and many car loads of tile have been put in during the past summer. The results have been uniformly satisfactory.

Other Industries—Building has been unusually brisk during the past year, with better buildings than ever before being put up.

Lands—Have not increased so much in the last six months as in the previous six months and are not moving quite so freely as they did in

1913. Rents have come up considerably and tenants are much more numerous than farms for rent.

Report of Fair—The Fayette county fair was held August 24th-28th and was one of the most satisfactory fairs in the history of the association. Notwithstanding one rainy day the aggregate attendance was larger than ever and the exhibits in nearly all the departments were exceptionally good.

GREENE.

S. C. CULBERTSON, JEFFERSON, OCTOBER 30, 1914.

General Condition of Crops and Season—Generally good.

Corn—Will yield from thirty to fifty bushels per acre.

Oats—Will yield from twenty to forty bushels per acre.

Wheat—Will yield from ten to twenty bushels per acre.

Rye—But little grown.

Barley—Practically none raised.

Flax—None raised.

Buckwheat—I know of none.

Timothy—Average yield.

Clover—Average yield.

Potatoes—Small crop.

Vegetables—Unusually good crop.

Apples—None.

Cattle—In this locality there are comparatively few cattle on feed, less than one-third the usual number, owing to the high price of feed.

Horses—The supply of horses for the war trade is very limited and prices are high. Prices for horses for ordinary trade and markets are poor.

Swine—The supply of hogs is less than last year—a falling off of about 50 per cent. But few hogs have been lost from disease in this county.

Sheep—More sheep being fed than last year.

Poultry—It has been a most excellent season for poultry.

Bees—None.

Drainage—In the past season Greene county has spent in excess of $200,000 in the way of district drainage.

Lands—In the early part of 1914 quite a lot of land changed hands at rates prevailing in 1913, the prices ranging from $185 to $250 per acre for the best lands with fair improvements. The latter part of 1914 but little has been done in land sales.

Report of Fair—Held on September 8th-11th, inclusive. We had rain on the first three days so we carried the fair over one day and this brought our attendance up to the average.

GRUNDY.

E. V. MC BROOM, GRUNDY CENTER, OCTOBER 26, 1914.

General Condition of Crops and Season—General condition of crops good. Early season too dry, latter part too wet.

Corn—Increased acreage. Yield about average and quality good.

Oats—Yield a little below the average; quality fair.

Wheat—Small acreage; yield and quality good.

Rye—Very little raised.

Barley—Fair yield; quality poor.

Flax—None raised.

Buckwheat—Very small quantity raised.

Millet—None.

Sorghum—Acreage small; quality very good.

Timothy—Very heavy; best in years.

Clover—Uneven but very good as a whole.

Prairie Hay—I know of none.

Other Grains and Grasses—A few small fields of alfalfa. This crop is yet experimental.

Potatoes—Decrease in acreage; quality fair. Yield from seventy-five to one hundred seventy-five bushels per acre.

Vegetables—All kinds good.

Apples—No late varieties.

Other Fruits—Grapes plentiful and good; some peaches, cherries and plums.

Cattle—About average in number but rather thin in flesh.

Horses—Increased in number. Many for sale and prices are good.

Swine—More than the usual number. Condition good.

Sheep—Only a few. Farmers seem to be going out of the business.

Poultry—Plentiful. Largest exhibit ever seen at the fair.

Bees—Very few kept.

Drainage—No drainage districts. Good natural drainage. Some tiling being done.

Lands—Not much changing hands but seems to be increasing in price.

Report of Fair—Held August 25-27, 1914. Weather was fair but cool. The attendance was good and more money was paid out in premiums than in any previous year. After paying premiums in full and all expense the society has neat little balance.

HANCOCK.

R. L. MC MILLEN, BRITT, SEPTEMBER 23, 1914.

General Condition of Crops and Season—The season has been good with plenty of rain and although the weather has been a little cool, crops have matured well.

Corn—Corn estimated to go around forty-five to sixty-five bushels per acre.

Oats—Early oats were a little light but quality was good. Yield about thirty-five to forty bushels per acre. Late oats were better than early oats.

Wheat—Very little wheat raised in this county.

Rye—Rye made a good crop here.

Buckwheat—Most buckwheat raised here does fine but the acreage is small.

Sorghum—No mill around here and although a lot of cane is raised it is all feed for horses during the winter.

Timothy—Good crop and all put up without being rained on.

Clover—Exceptionally good. Have even heard of the third and fourth crops being cut.

Prairie Hay—Scarce.

Potatoes—Good crop, especially the early ones.

Vegetables—Plenty of rain made all garden truck grow fine.

Apples—Very light crop and prices are high.

Other Fruits—Average.

Cattle—Increasing as to number and quality.

Horses—We have a good type of draft horses but the buyers keep them pretty well picked up.

Swine—We have lots of hogs and they are all in good, healthy condition.

Sheep—More sheep being raised each year.

Poultry—One of our principal industries.

Drainage—Every farm in and around this locality is being tiled if it has not already been drained.

Lands—Rapidly advancing. It is hard to find land at less than $125 per acre in this community.

Report of Fair—Held September 2d-4th, inclusive. We had a good fair, and good attendance. Financially our fair was a success.

HARDIN.

GEO. W. HAYNES, OCTOBER 28, 1914.

Corn—Generally a good crop; quality fine.

Oats—Good crop; average quality.

Wheat—Fair.

Rye—Fair.

Barley—Fair.

Flax—Not much raised in this county.

Sorghum—Good.

Timothy—Fair crop; good quality.

Clover—Good. The fall growth reported excellent.

Prairie Hay—Not much left.

Potatoes—Fair crop; very good quality.

Vegetables—Generally good.

Apples—Very few.

Cattle—Not so many as usual but they are in good condition.

Horses—About normal.

Swine—About normal and very little disease reported.

Sheep—Average.

Poultry—Plentiful and generally in good condition.

Drainage—A great deal being done.

Lands—Prices gradually on the increase.

Report of Fair—Held September 8-11, 1914. Weather conditions were very bad, causing a heavy shortage in attendance, consequently a financial shortage.

HARRISON.

A. B. HASBROOK, MISSOURI VALLEY, OCTOBER, 1914.

General Condition of Crops and Season—Season generally favorable for all farm crops.

Corn—Excellent. Much above the average for a ten-year period.

Oats—A fair yield was secured.

Wheat—The quality was good but the yield less than that of 1913.

Rye—Sown for pasture only.

Millet—Very little raised.

Timothy—Not much grown; fair yield.

Clover—Suffered from the dry weather.

Prairie Hay—A fair crop but not much in the county.

Other Grains and Grasses—Alfalfa is extensively cultivated and is successfully raised.

Potatoes—The yield of potatoes was fair.

Vegetables—All kinds are abundant and the quality is good.

Apples—Some good apples were produced but the yield was below the average.

Cattle—In good condition. Beef breeds predominate.

Horses—Draft horses predominate and the number is increasing, owing to the good demand for same.

Swine—Duroc Jerseys predominate.

Drainage—Great progress has been made in drainage.

Lands—Advancing in price. Prices range from $100 to $200 per acre.

Report of Fair—Held at Missouri Valley on September 15th-18th. In spite of unfavorable weather we paid all premiums and all expenses.

HENRY.

THEODORE RUSSELL, WINFIELD, OCTOBER 1, 1914.

General Condition of Crops and Season—Season was extremely dry, which naturally affected some crops.

Corn—About three-fifths of a crop; quality fine.

Oats—About four-fifths of a crop; quality good.

Wheat—Very little raised but good yield where sown; quality good.

Rye—But little grown; average yield and good quality.

Barley—None grown.

Flax—None.

Buckwheat—Very little grown.

Millet—Good; not much sown.

Sorghum—Not much grown; fairly good.

Timothy—Light crop and excellent quality.

Clover—Fair crop; excellent quality.

Prairie Hay—None.

Potatoes—Light crop.

Vegetables—Fairly good.

Apples—Almost a failure.

Other Fruits—Fairly good.

Cattle—Good condition.

Horses—All doing well.

Swine—Some cholera reported.

Sheep—Not a great many but they are doing fine.

Poultry—Lots of poultry and prices are good.

Bees—Not a great many.

Drainage—Good. Most all the county has been tiled.

Other Industries—Few.

Lands—Good prices prevail, ranging from $125 to $300 per acre.

Report of Fair—Held August 11th-14th, inclusive.

HENRY.

C. H. TRIBBY, MT. PLEASANT, OCTOBER 5, 1914.

General Condition of Crops and Season—Season was dry to begin with. Very little rain or snow through the winter and spring, which caused the ground to work like ashes and all spring crops were put in the ground in good shape.

Corn—Came up with very few hills missing. The lack of moisture early in the season hurt the crop, cutting it in two in some places. Some localities had but a third of a crop.

Oats—The best crop we have had for years. Average about thirty-eight bushels.

Wheat—All being fall sown it was a fine crop, away above the average. Yielded all the way from twenty to forty-five bushels per acre.

Rye—Good crop; more than the usual acreage.

Barley—Not much sown but the crop was good.

Flax—None.

Buckwheat—Scarcely any grown.

Millet—Very little sown.

Sorghum—Good crop but not a large acreage.

Timothy—Light but of fine quality.

Clover—Large acreage. Not so heavy as usual but of extra fine quality. There is now ten acres of clover to one of timothy.

Other Grains and Grasses—Alfalfa is being sown more each year and it is doing much better as our farmers learn how to handle it.

Potatoes—Light crop, caused by the drouth.

Vegetables—Light crop; good quality.

Apples—There is not five per cent of a crop.

Other Fruits—Small fruits were light on account of the dry weather.

Cattle—Not many raised but farmers are now beginning to think they can afford to raise calves on high priced land and several are stocking up with heifers and cows.

Horses—Plentiful. Many would not sell the past season on account of a little depreciation in value and now want to sell on a lower market. The war horses seem to be mostly in demand.

Swine—Cholera played havoc this season and I think a half of the spring crop of pigs has been lost.

Sheep—Increasing and doing fine. If our farmers could be assured of 25c for wool practically all of them would raise sheep.

Poultry—More interest each year in the poultry business.

Bees—Very few of late years.

Drainage—Practically all ground is tiled.

Other Industries—Good.

Lands—Not much changing hands this fall. No depreciation noticeable in values.

Report of Fair—Held at Mt. Pleasant, August 18th-27th. We had a great fair despite the dry weather.

HUMBOLDT.

O. H. DE GROOTE, HUMBOLDT, SEPTEMBER 21, 1914.

General Condition of Crops and Season—Excellent.

Corn—Will yield from forty to seventy bushels, except on a small per cent of river bottom land and sandy knolls.

Oats—Yielded about forty-seven bushels per acre; a trifle light in weight.

Wheat—Very small acreage. Winter wheat was good; spring wheat light.

Rye—Small acreage; fair condition.

Barley—Small acreage; average yield.

Flax—Almost a crop of the past.

Buckwheat—Very little raised.

Millet—Condition fair.

Sorghum—Very little made.

Timothy—Average crop.

Clover—Fair to excellent.

Prairie Hay—Average.

Potatoes—Early potatoes made an average crop; late potatoes were hurt some by the drouth.

Vegetables—Plentiful.

Apples—Almost a failure.

Other Fruits—Good.

Cattle—About the average number.

Horses—About the average number.

Swine—We had no cholera last year and we have a nice lot of young pigs.

Sheep—About the same as last year.

Poultry—This industry is in a flourishing condition.

Bees—Very poor honey yield.

Drainage—Each year sees an increase in the amount of tile laid.

Other Industries—In good condition.

Lands—Selling from $150 to $225 per acre. Several tenants forced to leave because no farms could be obtained.

Report of Fair—Held August 18th-21st, inclusive. We paid all expenses and have money in the bank. Our fair was a success in every way.

IOWA.

JOHN C. HINRICHS, VICTOR, IOWA, OCTOBER 2, 1914.

General Condition of Crops and Season—Slight shortage of rainfall held the crops back a little but caused no great damage. No frost before October.

Corn—Heavy acreage. Will easily average fifty bushels. Some fields will make eighty. Some fields damaged by wind but not seriously.

Oats—Fair amount. Averages about thirty-five bushels to the acre.

Wheat—Averages about twenty bushels. Some fields as high as thirty-seven bushels.

Rye—Not much raised. Yielded about twelve bushels to the acre.

Barley—Made about thirty bushels to the acre; small acreage.

Flax—None raised near here.

Buckwheat—None raised.

Millet—Very little raised but what we had was good.

Sorghum—Practically none.

Timothy—A very large crop. A safe average would be eight bushels an acre. Hay was rather short but of good quality.

Clover—Considerable seeded in with timothy. Second crop not yet hulled.

Prairie Hay—None.

Other Grains and Grasses—Considerable interest is being aroused in alfalfa. A large number of farmers are planting it this year.

Potatoes—Small acreage; yielding perhaps one hundred fifty bushels per acre.

Vegetables—This has been a good year for vegetables of all kinds.

Apples—None.

Other Fruits—Good.

Cattle—Average number being fed. Dairy cattle on the increase.

Horses—Quite a little breeding done. Prices high.

Swine—A good year for swine. More than the average number raised. Have heard of no cholera.

Sheep—Very few raised.

Poultry—Plentiful.

Bees—Not many but they are doing well. This has been a good year for honey.

Drainage—Good. Most of the farms are well tiled. Freshets caused some damage but it was of an unavoidable nature.

Other Industries—Much building being done, especially by farmers.

Lands—Not a great amount of land for sale. Prices are increasing. The highest paid lately was $265 an acre but there are numerous farmers who have had offers of $300 or more.

Report of Fair—Held August 11th-13th, inclusive. Weather was fine but it was dry and dusty. Our amphitheater burned this spring and there was an indebtedness on it of $712.

IOWA.

H. A. HALVERSON, WILLIAMSBURG, SEPTEMBER 30, 1914.

General Condition of Crops and Season—Good.

Corn—About two-thirds of a crop.

Oats—Good.

Wheat—Not much grown.

Rye—Very little raised.

Barley—Good.

Flax—None raised.

Buckwheat—None raised.

Millet—Good but not much raised.

Sorghum—Very little raised.

Timothy—About one-half crop.

Clover—About one ton per acre.

Prairie Hay—None.

Potatoes—Fair crop.

Vegetables—About one-half crop.

Apples—About one-third crop.

Other Fruits—Not very good on account of drouth.

Cattle—Every farmer has a herd of cattle.

Horses—Good. Most every farmer raises a few colts.

Swine—Good. Some cholera in the county.

Sheep—Not very many raised.

Poultry—One of our principal industries.

Bees—Not very many left.

Drainage—The county is well drained out.

Lands—Selling from $125 to $250 per acre.

Report of Fair—Held on September 8th-10th, inclusive, but on account of the rainy weather we only had one good fair day.

JACKSON.

W. D. M'CAFFREY, MAQUOKETA, SEPTEMBER 25, 1914.

Corn—Good, except along the river where it was washed out.

Oats—Good.

Wheat—Not much raised.

Rye—Very little grown.

Barley—None raised.

Flax—I know of none.

Buckwheat—Very little raised.

Millet—I know of none.

Wheat—100 per cent.

Rye—100 per cent.

Barley—80 per cent.

Flax—None.

Buckwheat—None.

Timothy—80 per cent.

Clover—100 per cent.

Prairie Hay—None.

Other Grains and Grasses—100 per cent.

Potatoes—70 per cent.

Vegetables—80 per cent.

Apples—None.

Other Fruits—50 per cent.

Cattle—Average as compared with the past two years.

Horses—100 per cent.

Swine—100 per cent.

Sheep—50 per cent.

Poultry—100 per cent.

Bees—100 per cent.

Drainage—A great deal has been done along this line.

Other Industries—Good.

Lands—High and advancing.

Report of Fair—September 21st-24th, inclusive. We had the best fair this county has ever had. Many improvements were made this year and we had night attractions for the first time, with free acts and fireworks.

JEFFERSON.

A. E. LABAGH, FAIRFIELD, OCTOBER 28, 1914.

General Condition of Crops and Season—Good, slightly damaged by drouth.

Corn—Good.

Oats—Fair yield; good quality.

Wheat—Good; only a small acreage.

Rye—Same as wheat.

Barley—None.

Sorghum—Very little grown.

Timothy—Good.

Clover—Good.

Prairie Hay—Very little left.

Potatoes—Early potatoes good; late ones a light crop.

Vegetables—Most of the vegetables were good.

Apples—Very few this year.

Cattle—We have a high class of grade cattle and there are a great many of them.

Horses—We have a good supply and they are of a good grade.

Swine—There were a good many hogs raised but cholera has taken quite a few of them.

Sheep—Not many raised.

Poultry—Prosperous.

Bees—Very few in the county.

Drainage—Natural drainage.

Other Industries—Farming is the principal industry.

Lands—Price of land is steadily increasing.

Report of Fair—Held September 1st-4th, inclusive. One of the best fairs we have ever had. The attendance was good, exhibits excellent and the weather fine.

JASPER.

F. E. MEREDITH, NEWTON, OCTOBER 26, 1914.

General Condition of Crops and Season—About the average.

Corn—90 per cent.

Oats—90 per cent.

Flax—None.

Buckwheat—Good but only a small acreage.

Millet—Very little in this section.

Sorghum—Very good.

Timothy—Good quality but yield not so large as usual on account of drouth.

Clover—Good.

Prairie Hay—None.

Potatoes—Very light yield.

Vegetables—Very good.

Apples—Crop very light except where trees were sprayed.

Other Fruits—Average yield.

Cattle—Lots of cattle in this section and they are in good condition.

Horses—Same as cattle.

Swine—A large number. No cholera reported to amount to anything.

Sheep—An increasing industry.

Poultry—About the same.

Bees—Did fairly well but there are not many kept.

Drainage—Very little done in this line as most of our lands are naturally well drained.

Other Industries—Manufacturing has been thriving.

Lands—Steadily rising in value.

Report of Fair—Held August 4th-7th, inclusive. We had a record attendance and the fair generally considered most successful.

JOHNSON.

GEO. A. HITCHCOCK, IOWA CITY, OCTOBER 27, 1914.

General Condition of Crops and Season—Good crops. Season at times very dry but since the first of September we have had good rains, which have made the late potatoes and pastures look fine.

Corn—Good quality and good yields but blown down in a good many places by the wind.

Oats—Fair in quality but not an extra good yield.

Wheat—Good in quality and yield.

Rye—Not much raised but what we had was good.

Barley—Good.

Flax—None raised.

Buckwheat—Very little raised.

Millet—None to speak of.

Sorghum—Quite a little raised for feeding purposes.

Timothy—Fair yield of seed and a good hay crop.

Clover—Good yield of hay and some cut for seed.

Prairie Hay—None.

Potatoes—A fair yield and about the usual acreage.

Vegetables—Have done well.

Apples—Hardly any.

Other Fruits—Small berries were a good crop.

Cattle—About the usual number and very high in price.

Horses—Lower in price than last year. A good demand for horses of the lighter grades on account of the war.

Swine—About the usual number. Quite a little cholera in some parts of the county.

Sheep—Not many raised or handled here.

Poultry—Healthy and prices are high for both poultry and eggs.

Bees—Not many stands in the county.

Drainage—Not as much tile put in as in some previous years.

Other Industries—All complain of hard times and lack of money among the people, due, it is claimed, to the European war.

Lands—Range in price from $125 to $250 per acre. Not so many sales as a year ago.

Report of Fair—We tried to hold our fair on September 8th to 11th, inclusive but it rained so much that we closed up entirely on the third day. Have paid all premiums in full so that we will be in debt to quite an amount. We are planning for a bigger and better fair than ever next year.

JONES.

C. J. NORTHRUP, MONTICELLO, OCTOBER 13, 1914.

General Condition of Crops and Season—Good.

Corn—Good.

Oats—Fair.

Wheat—Good but not much raised.

Rye—Good.

Barley—Good.

Flax—None raised.

Buckwheat—None raised.

Millet—I know of none.

Timothy—Good.

Clover—Good.

Prairie Hay—None raised.

Other Grains and Grasses—Good.

Potatoes—Good.

Vegetables—Good.

Apples—None.

Other Fruits—Good.

Cattle—Good.

Horses—Good.

Swine—Good.

Sheep—Good.

Poultry—Good.

Bees—In good condition.

Drainage—Fair.

Other Industries—Excellent.

Lands—Increasing in value.

Report of Fair—Held August 24th-28th, inclusive. Largest and most successful fair ever held. Weather conditions favorable.

JONES.

L. W. RUSSEL, ANAMOSA, OCTOBER 14, 1914.

General Condition of Crops and Season—Good.

Corn—Good crop of corn.

Oats—Average yield.

Wheat—Light crop.

Rye—Average crop.

Barley—Good crop.

Flax—None raised.

Buckwheat—Very good.

Millet—Good.

Sorghum—Fair.

Timothy—Very good.

Clover—Very good; better than usual.

Prairie Hay—Good.

Other Grains and Grasses—All good.

Potatoes—Average crop.

Vegetables—Good.

Apples—Not very good.

Other Fruits—Average crop.

Cattle—Average number.

Horses—Plentiful.

Swine—Plentiful.

Sheep—Average number.

Poultry—Fine.

Bees—Not very favorable.

Drainage—Good.

Other Industries—Fair.

Lands—Good and advancing in price.

Report of Fair—Held August 11th-14th, inclusive. Best fair in the history of the association; also the largest gate receipts.

KEOKUK.

GEO. A. POFF, WHAT CHEER, OCTOBER 12, 1914.

General Condition of Crops and Season—Unfavorable on account of drouth.

Corn—Large acreage and the yield will average from forty to sixty bushels per acre.

Oats—Average acreage. Straw is short on account of dry weather.

Wheat—About the same acreage as last year.

Sorghum—Very little raised; quality good.

Timothy—Small crop; about one and one-fourth tons per acre.

Clover—Good yield.

Prairie Hay—Medium crop.

Potatoes—Not a very large yield and selling from seventy to eighty cents per bushel.

Vegetables—Short crop but quality is excellent.

Apples—Very few apples this year. Almost a total failure.

Other Fruits—A scarcity of all kinds.

Cattle—A number of fine herds.

Horses—Breeds improving, especially the heavy draft horses. A great many horses sold here to eastern buyers.

Swine—More than last year. No disease reported.

Sheep—Good quality but not many raised here.

Poultry—One of our principal industries.

Bees—Lots of bees but little honey on account of dry weather.

Drainage—Increasing.

Other Industries—Doing well.

Lands—Advancing.

Report of Fair—Held September 21st-24th, inclusive. Very good exhibits in all departments; good attractions and the fair was a splendid success financially.

KOSSUTH.

T. P. HARRINGTON, ALGONA, OCTOBER 22, 1914.

General Condition of Crops and Season—All crops better than the average, except fruit. Season excellent with the exception of a few days of excessively hot weather in the early part of July.

Corn—An unusually good yield and excellent quality.

Oats—Growth of straw heavy and promised better than the average yield but the hot weather cut it short. The yield will average about thirty-five bushels per acre.

Wheat—Fair crop but little raised.

Rye—Practically none raised.

Barley—Very little grown; fair crop.

Flax—Good growth but filled poorly. Not a large acreage.

Buckwheat—Practically none raised.

Millet—Crop good but not much grown.

Sorghum—I know of none.

Timothy—Very good.

Clover—Unusually good and the acreage is increasing.

Prairie Hay—Good crop but not much left in the county.

Other Grains and Grasses—Good reports from alfalfa and many preparing to sow small fields.

Potatoes—Yield small; not enough to supply home demand.

Vegetables—All kinds good. Crop was light in early part of season.

Apples—Almost a total failure.

Other Fruits—Berries made a good crop but other small fruits are scarce.

Cattle—Scarce, but the farmers are increasing their herds. The dairy breeds are becoming most popular.

Horses—Quality is improving. Prices are high, and it is a great temptation to let the best individuals go.

Swine—Owing to cholera, we have a light stock of pigs.

Sheep—Not many raised, but they are profitable.

Poultry—More than the usual amount of eggs and poultry marketed.

Bees—No special effort made to encourage the bee industry.

Drainage—A very marked increase in this line.

Other Industries—Farming, mostly.

Lands—Have increased in market value from $10 to $25 per acre during the year and several farms have changed hands.

Report of Fair—Held September 8th-11th, inclusive. We had a rainy week and our gate receipts were not what we had anticipated. However, our fair was a success. We paid all premiums, etc., but will have to borrow money to pay for improvements.

LEE.

CHRIS HAFFNER, DONNELLSON, SEPTEMBER 28, 1914.

General Condition of Crops and Season—Fair.

Corn—About half a crop, caused by excessive drouth in July and August.

Oats—Half crop; quality good.

Wheat—Full crop; good quality.

Rye—Full crop; fine quality.

Barley—Very little raised.

Flax—None.

Buckwheat—None raised.

Millet—None.

Sorghum—Very little raised.

Timothy—Fair.

Clover—Light crop.

Prairie Hay—None.

Other Grains and Grasses—Fair.

Potatoes—Very light crop, owing to drouth.

Vegetables—Fair crop.

Apples—Very few apples.

Other Fruits—Pears, peaches, plums and cherries a good crop.

Cattle—Short Horns and Polled Angus predominate.

Horses—Percherons predominate.

Swine—Poland Chinas and Duroc Jerseys predominate.

Sheep—Shropshire and Delaines predominate.

Poultry—A great deal of interest taken in poultry raising and all breeds are represented.

Bees—Very few kept.

Drainage—More attention given to tiling than ever before.

Lands—Selling from $125 to $225 per acre.

Report of Fair—Held August 11th-14th, and was a success in every way. We had fine weather, good attendance and the largest receipts in the history of the fair.

LEE.

JOHN WALLJASPER, WEST POINT, OCTOBER 26, 1914.

General Condition of Crops and Season—The season opened up auspiciously, but about June the drouth began and it continued until September. General condition of crops, fair.

Corn—Average from thirty to forty-five bushels.

Oats—Yielded about thirty-five bushels to the acre; quality first class.

Wheat—Fine crop; average yield from twenty to twenty-five bushels per acre.

Rye—Not much sown. Quality fine; average yield twenty-five bushels to the acre.

Barley—Hardly any sown; quality and yield poor.

Flax—None sown.

Buckwheat—Very little sown. Quality and yield fair.

Millet—Good quality and yield above the average.

Sorghum—Very little grown; quality and yield good.

Timothy—The drouth cut the yield short about one to two tons per acre; quality good.

Clover—Very little grown. Quality was good; also the yield was fair.

Prairie Hay—None.

Other Grains and Grasses—Farmers are making an attempt to grow alfalfa. That which was sown did well and it will be a coming crop.

Potatoes—Average yield; good quality.

Vegetables—Fair.

Apples—Almost a failure.

Other Fruits—Very good.

Cattle—Owing to the drouth of the last two or three years, farmers have sold most of their cattle, and there is a general shortage, which will soon be made up on account of the high price of beef.

Horses—We have a lot of good horses in this district, but prices are somewhat low. On account of the war in Europe, we predict there will be a better demand with higher prices.

Swine—This is always the money making industry in this county. Not so much cholera as last year.

Sheep—Lots of sheep in this locality and still more farmers are planning on going into this business.

Poultry—This is a great poultry county.

Bees—Very poor year on account of the drouth this summer.

Drainage—Owners of flat and low lands are tiling their farms.

Lands—Prices range from $50 to $225 per acre.

Report of Fair—Held September 22d-25th, inclusive, and it was a "hummer."

LINN.

H. F. LOCKWOOD, CENTRAL CITY, OCTOBER 5, 1914.

General Condition of Crops and Season—Very good.

Corn—Forty-five bushels per acre.

Oats—Twenty-five bushels per acre.

Wheat—Very little grown.

Flax—None.

Buckwheat—Very little raised.

Millet—Very little grown.

Sorghum—Good quality and yield.

Timothy—Average yield.

Clover—Good yield.

Prairie Hay—Not very heavy on account of lack of rain in the early summer.

Potatoes—Average crop.

Vegetables—Average crop.

Apples—Very few apples.

Other Fruits—Very good crop.

Cattle—Scarce in this locality.

Horses—High prices prevail and the demand is heavy.

Swine—High prices prevail and hogs are scarce.

Sheep—Demand good prices and scarce.

Report of Fair—Wapsie Valley Fair held August 31st to September 4th. The attendance and gate receipts were the best in the history of the fair.

LUCAS.

REV. DEWITT WHITE, DERBY, OCTOBER 24, 1914.

General Condition of Crops and Season—Good.

Corn—The best stand we have had in years. Where moisture was conserved corn goes to fifty to sixty bushels, which is extraordinary. It is all clean and a higher percentage went into the silos than ever before.

Oats—Too dry for oats; quality was good.

Wheat—75 per cent of average yield. Winter killed in spots.

Rye—I know of none.

Barley—Very small acreage.

Flax—Not any.

Buckwheat—Used only as a catch crop where corn fails to make a stand.

Millet—Small acreage.

Sorghum—Not enough for home consumption.

Timothy—50 per cent of the usual crop. Too dry.

Clover—Did reasonably well.

Prairie Hay—None.

Other Grain and Grasses—Blue grass pastures have never been better.

Potatoes—Not one farmer in ten raised sufficient for family use. Early season too dry.

Vegetables—Extra early gardens fine. Too dry during the summer for the late gardens.

Apples—Probably 10 per cent of a crop.

Other Fruits—Peaches were an unusual crop. There were but few berries.

Cattle—Standard is being gradually raised. Only about 50 per cent of the usual number.

Horses—In splendid condition but not many colts. Europe is picking up everything of the artillery kind.

Swine—Lots of cholera.

Sheep—There is a scarcity of sheep.

Poultry—A good year for poultry.

Bees—Too dry for a good bee season.

Drainage—Very little, except surface drainage is used. Tiling is gaining in the minds of the people.

Other Industries—Good.

Lands—People are learning to study the land as they do other assets and they farm the land instead of mine it.

Report of Fair—Held October 21th-24th, and was a very pronounced success.

LYON.

CHAS. W. BRADLEY, SEPTEMBER 29, 1914.

General Condition of Crops and Season—Good crops and fine season.

Corn—Corn crop in the very best condition and one of the best yields we have ever had. Approximately 60 per cent of the acreage is in corn and the quality is first class. No killing frosts to date.

Oats—Fair quality; medium acreage and yield about forty-five bushels per acre.

Wheat—Very light acreage; yield and quality poor.

Rye—Small acreage; quality and yield good.

Barley—Good acreage; quality first class; yield about forty bushels per acre.

Flax—Very light acreage; yield and quality fair.

Buckwheat—Practically none raised in this vicinity.

Millet—Millet fair acreage and first class quality.

Sorghum—Light acreage; quality first class.

Timothy—Good quality and yield; acreage light.

Clover—Heavy acreage; yield and quality the very best.

Prairie Hay—Light acreage; quality and yield good.

Other Grains and Grasses—Alfalfa made a good yield and the quality was good. Not a large acreage, however.

Potatoes—A good acreage; quality first class and yield at least two hundred bushels per acre.

Vegetables—All kinds; quality first class; yield heavy.

Apples—Very light yield; good quality.

Other Fruits—Light yield; good quality.

Cattle—Heavy number, condition the very best and free from all diseases.

Horses—Medium numbers; quality, size and condition good.

Swine—Considering cholera of last year we have a nice lot and the quality is of the very best. Practically free from disease this year.

Sheep—Not many but quality is good.

Poultry—Lots of poultry; quality good and practically free from disease.

Bees—Very few bees; condition good.

Drainage—Natural drainage perfect; little, if any, tile necessary.

Other Industries—Very few other industries. Cement machinery manufacturing concern doing a good business.

Lands—Of the very highest quality and in first class condition. Average price at least $175 per acre.

Report of Fair—Held August 31st to September 4th, inclusive. A very good fair.

MAHASKA.

J. C. HEITSMAN, NEW SHARON, OCTOBER 27, 1914.

General Condition of Crops and Season—Spring conditions were good, with plenty of time for seeding and planting. The summer turned extremely dry, cutting short the late crops. The fall was too wet and the crops were injured to some extent in the fields.

Corn—Corn planted in good condition and by July 1st the crop was far ahead of the average. Hot dry weather set in then and continued until the crop was injured. In September heavy rains set in and the corn was also blown down considerably. Crop will average from 60 to 70 per cent of the ordinary crop.

Oats—Oats started slow on account of the dry weather but we had rains at the right time and the crop averaged above the ordinary.

Wheat—Generally fine crop.

Rye—No rye raised in this immediate vicinity.

Barley—Hardly any raised.

Flax—None.

Buckwheat—None.

Millet—Very little grown.

Sorghum—Very little raised.

Timothy—Quite a good acreage. The crop was slow in starting and the dry weather kept it short but the quality was excellent.

Clover—Not quite an average crop on account of lack of rain.

Potatoes—Badly damaged by dry weather.

Vegetables—Only fair on account of the extreme dryness.

Apples—Hardly any.

Other Fruits—Strawberries, blackberries and raspberries, very short; peaches plentiful.

Cattle—Not the usual number and not many being fitted for market.

Horses—Show an improvement. More draft horses are now being raised and the quality is improving.

Swine—We have had quite a little disease in the past few years but we have the average number. Better hogs are being produced and farmers are paying more attention to them.

Sheep—More than the average number and they are in better condition.

Poultry—Far below the average.

Bees—Very few on account of severe winters. Not much attention paid to this industry.

Drainage—Good; practically all farms are tiled out.

Lands—Higher in price than formerly. Best farms running to $300 per acre. Cash sales, however, are not so frequent.

Report of Fair—Held September 14th to 17th, inclusive. Very heavy rainfall during the week and we only had two days of good fair weather. A good many bridges were washed out, thus our attendance was far below the average. We had more exhibits than usual.

MARION.

CHAS PORTER, PELLA, OCTOBER 30, 1914.

General Condition of Crops and Season—Fair.

Corn—The early corn did not ear so well as the late planting but the crop is good.

Oats—Some report yields of from fifty to sixty-five bushels per acre. Rain did some damage.

Wheat—Winter wheat generally good yield and quality, making from twenty to forty-three bushels per acre. Spring varieties yielded from twelve to twenty-two bushels.

Barley—Some regenerated or selected seed sown and this proved a paying crop. We believe there will be more sown in the future.

Flax—None.

Buckwheat—None.

Millet—Very little grown.

Sorghum—Not grown very extensively but there is a tendency on the part of the farmers to go into more intensive farming and this will be a paying crop.

Timothy—The acreage is decreasing. It has been impossible to get very good seed the past few years.

Clover—Without clover we would be now compelled to resort to the use of fertilizers. Rotation of crops with clover is a good profit maker.

Prairie Hay—None.

Other Grains and Grasses—None.

Potatoes—Both early and late were better than had been anticipated.

Vegetables—Early gardens excellent but the late ones were hurt by the hot dry weather.

Apples—Only a few of the well cared for orchards gave returns this year.

Other Fruits—Berries were a fair crop.

Cattle—The beef breeds predominate, with the Shorthorns leading. Our people believe the Shorthorn is the best breed for both beef and dairy purposes.

Horses—A nice lot of young stock and there is a good demand.

Swine—A good bit of cholera reported the past year.

Sheep—Increased in number. Large numbers are shipped in from the west in the fall for feeding purposes.

Poultry—All farmers raised lots of poultry.

Bees—Few are paying any attention to bees. Those who make a study of the bee industry are securing good results.

Drainage—Most of the flat and slough lands are tiled.

Other Industries—Doing well.

Lands—I should say values have increased 10 per cent. Prices range from $100 to $250 per acre.

Report of Fair—Held September 8th-11th, inclusive. We had but one good day, yet we will pay our premiums in full.

MARSHALL.

H. M. WEEKS, RHODES, OCTOBER 2, 1914.

General Condition of Crops and Season—Work was retarded in the spring by rain. Later crops were damaged by drouth and the drouth was followed by excessive rains in September.

Corn—Damaged somewhat by dry weather but the crop is fair and it is out of the way of frost.

Oats—A fair yield and harvested in good condition. Rather light in weight.

Wheat—Not much spring wheat raised. More winter wheat is being raised each year.

Rye—Scarcely any.

Barley—None raised.

Flax—I know of none.

Buckwheat—None.

Millet—Only a fill-in crop.

Sorghum—But very little raised.

Timothy—A light crop but secured in fine condition; quality fine.

Clover—Light crop, caused by the hard winter. Late rains have made a fair second crop and a fairly good yield of seed.

Prairie Hay—No wild hay except in sloughs.

Other Grains and Grasses—More alfalfa raised each season. This year it made a fair crop. Some farmers are experimenting with sweet clover.

Potatoes—Early potatoes were badly injured by the drouth. The late ones were benefited by the September rains but the crop was not large. Selling for $1.00 per bushel.

Vegetables—Injured by drouth but a fair yield was secured. Some very fine sweet potatoes are grown.

Apples—Almost a failure.

Other Fruits—Fair.

Cattle—No disease. Short pastures left them very thin. More attention is paid each year to the dairy breeds.

Horses—Much attention has been given to the improvement of the breeds; but few grade stallions are kept. Good animals are scarce and command good prices.

Swine—But little disease compared with the last two years. Poland Chinas and Duroc Jerseys are the leading breeds in this locality.

Sheep—Not many kept. Some shipped in from the west for feeders.

Poultry—More attention paid to this industry than ever before.

Bees—Not very many.

Drainage—Most of the low land in this district is well tiled.

Other Industries—Creameries, cement plants, etc., all doing a good business.

Lands—Not so many sales this year but prices are firm, ranging from $100 to $250 per acre for improved farms.

Report of Fair—Held September 22d-25th, inclusive. We had fine weather but our attendance was cut somewhat by reason of the fact that the Tama county fair and the Jasper county fair were held on the same dates. Our exhibits were all good.

MARSHALL.

W. M. CLARKE, MARSHALLTOWN, OCTOBER 14, 1914.

General Condition of Crops and Season—Not the average amount of rainfall during the first part of the season but since then we have had too much.

Corn—Average crop but it is being damaged at this time by the continual rains.

Oats—Yielded forty-five bushels per acre.

Wheat—Winter wheat good; spring wheat but a fair crop.

Rye—None raised.

Barley—But little raised and that only an average crop.

Flax—None raised.

Buckwheat—None raised for market.

Millet—Small acreage but a good crop.

Sorghum—None raised for market.

Timothy—Small acreage. Yielded one and one-half tons per acre. Not much seed saved.

Clover—First crop good; second crop fair. Not much seed saved on account of hail storm and wet weather.

Prairie Hay—None.

Other Grains and Grasses—Average crop.

Potatoes—Early potatoes, a fine crop and good quality. Late potatoes, a good crop but harvested in poor condition.

Vegetables—Good.

Apples—Very scarce and poor.

Other Fruits—Good.

Cattle—In good condition; fall pastures fine.

Horses—Average number of colts being raised. Mostly draft breeds.

Swine—No disease to speak of this year. Not the usual number on hand, however, on account of the scarcity of brood sows.

Sheep—Very few raised.

Poultry—A large and growing industry.

Bees—Honey output small and of an inferior quality.

Drainage—No public drainage. Nearly all low places are tiled by individuals.

Lands—Continue to advance in price. Modern methods of farming bring satisfactory results.

Report of Fair—Held September 14th-19th, inclusive. Taken as a whole our fair was one of the best we have ever had. We had especially good exhibits in the stock and agricultural department. We had considerable rain during the week and for the first time in many years we are in debt.

MILLS.

G. H. WHITE, MALVERN, OCTOBER 31, 1914.

General Condition of Crops and Season—Season was not favorable for the best results. Crops below the average.

Corn—Average about thirty bushels to the acre. On account of heavy winds and much rain in September the corn is badly down and much of it is of poor quality.

Wheat—Average of about twenty bushels to the acre; quality good.

Rye—Very little rye raised in this county.

Barley—Very little barley in this county.

Flax—None.

Millet—About the average crop. Not a large acreage.

Sorghum—About the average crop. Not much raised.

Timothy—On account of the dry season there was not much timothy and it yielded about one ton to the acre.

Clover—A good crop; yielded about a ton and a half per acre.

Prairie Hay—Not much left.

Other Grains and Grasses—About the only other grass raised in this county is alfalfa, of which there is quite a large acreage. The crop was good, most of it making four good crops.

Potatoes—Light crop and not the usual acreage.

Vegetables—Only grown for home consumption. Crop light on account of the dry weather.

Apples—A light crop.

Other Fruits—All kinds very light.

Cattle—About the usual number of cattle in the pastures but very few in the feed lots.

Horses—Not so many colts as usual.

Swine—About the usual number of hogs and there has been considerable loss from disease.

Sheep—Very few sheep raised in this county.

Poultry—About the usual number.

Bees—Very few bees in this county. Honey crop short.

Drainage—No drainage projects in the course of construction at present.

Lands—Advancing in price, ranging from $100 to $200 per acre.

Report of Fair—Held August 4th-7th, inclusive. The attendance was good; races very good; exhibits good in the stock departments but our dates were too early for good displays in the agricultural and fruit departments.

MITCHELL.

CARL H. SPAANUM, OSAGE, SEPTEMBER 30, 1914.

General Condition of Crops and Season—Crops in general are good. Season has been fair.

Corn—Yield varies over the county. Some places the yield will be sixty to seventy-five bushels per acre but where the flood covered the land corn is not so good.

Oats—Fair crop; average about thirty-five bushels.

Wheat—Very little raised.

Rye—Very little grown.

Barley—Fairly good; yield about thirty bushels.

Flax—Very little grown.

Timothy—Fair yield but not much raised this year.

Clover—Not yet hulled.

Prairie Hay—Good crop; one and one-half tons per acre.

Potatoes—Yield not very good. Too early for report as to late potatoes.

Apples—No apples.

Cattle—In demand. A great many are shipped in for feeding purposes.

Horses—Seem to be very plentiful.

Swine—Not as many as usual on account of cholera last year. Very few cases of cholera reported this year.

Other Industries—Farming is the chief industry.

Lands—Going up in price. A great many farms are selling from $140 to $150 per acre.

Report of Fair—Held August 25th-28th. We lost money as the attendance was very poor on account of the bad weather.

MONONA.

J. M. HATHAWAY, ONAWA, OCTOBER 10, 1914.

General Condition of Crops and Season—Too dry for most crops.

Corn—Too dry for full crop in most parts of the county. About 65 per cent of a full crop and badly blown down.

Oats—A full average yield.

Wheat—Winter wheat about average; yield good and quality very good.

Rye—Very little grown in this vicinity.

Barley—An average crop.

Flax—Very little grown.

Buckwheat—None grown.

Millet—Average crop.

Sorghum—None.

Timothy—Too dry for timothy.

Clover—Too dry.

Prairie Hay—Average crop.

Other Grains and Grasses—A big yield of alfalfa and four cuttings.

Potatoes—Light crop.

Vegetables—Fair.

Apples—Very few.

Other Fruits—All light except cherries and plums.

Cattle—Not so many as last year but they are in good condition.

Horses—Not so many colts as in former years.

Swine—Fair pig crop. Very little cholera as yet.

Sheep—Very few raised but they do well.

Poultry—Average for all kinds.

Bees—Not many. Little honey on account of dry season.

Drainage—Dry and not much needed.

Lands—Prices about the same as last year.

Report of Fair—Held September 15th-18th. Premiums paid larger than for any previous year and attendance was good. Receipts and expenditures about equal. Prospects are good for next year.

MONROE.

W. T. GARDNER, ALBIA, OCTOBER 29, 1914.

General Condition of Crops and Season—Good.

Corn—30 per cent.

Oats—Good.

Wheat—Fall wheat 20 per cent; no spring wheat to speak of.

Barley—None.

Clover—Fair crop; one ton to the acre. Not much threshed.

Potatoes—Good.

Vegetables—Good.

Apples—None to speak of.

Other Fruits—Fair.

Cattle—In good condition.

Horses—Usual number.

Swine—Plentiful; some cholera.

Sheep—Not many.

Poultry—Lots and in good healthy condition.

Bees—Few.

Lands—Selling from $50 to $175 per acre; not much changing hands.

Report of Fair—Held August 24th-27th, inclusive. The best fair we have ever had.

MUSCATINE.

L. O. MOSHER.

General Condition of Crops and Season—Average.

Corn—An unusually good stand to start with but the dry weather checked it to some extent; however, I would say the crop was average.

Oats—Short but well filled; quality excellent.

Wheat—A minor crop but generally very good.

Rye—But little grown; good.

Barley—A secondary crop; of fair yield and quality.

Flax—None grown.

Millet—But little grown; a good crop and harvested in good shape.

Sorghum—But little grown.

Timothy—Average acreage; yield medium; quality of hay prime.

Clover—A fair average yield. Considerable second crop cut for seed; yield of seed excellent.

Prairie Hay—None.

Other Grains and Grasses—Several small fields of alfalfa grown.

Potatoes—A light yield of both early and late varieties.

Vegetables—Generally fair to good.

Apples—Hardly any.

Other Fruits—Average.

Cattle—About the usual number of cattle of all breeds and ages. Not many on feed, more attention being paid to dairying.

Horses—All classes represented, and there are many good specimens. The market at this time is rather slow.

Swine—The usual number. Cholera is considerably scattered over the county and many are vaccinating.

Sheep—Not many in the county. Some are shipped in for feeding.

Poultry—This industry adds much to the finances of the county.

Bees—An unimportant industry.

Drainage—The dry seasons of 1913-14 have not been conducive to work along the drainage line.

Other Industries—Principally a farming community.

Lands—The price of land is holding steady to an advance and ranges from $175 to $250 per acre for farms and transfers at those figures are not rare.

Report of Fair—The Union District Agricultural Society held its fifty-second annual exhibition on August 24th-27th, inclusive. The exhibits were good in all departments and financially the fair was a success.

MUSCATINE.

W. A. COOLING, MUSCATINE, OCTOBER 24, 1914.

General Condition of Crops and Season—All crops are about the average although the early part of the season was very dry. During the month of October we have had plenty of rain.

Corn—In the southern part of the county corn will go from fifty to sixty-five bushels to the acre, while in the northern part the yield will be less on account of the dry weather and heavy winds.

Oats—Are of good quality but the yield is poor on account of the hot dry weather.

Wheat—Winter wheat was very good, both as to yield and quality.

Barley—Good quality but a poor yield.

Buckwheat—No buckwheat raised.

Millet—Very little raised.

Sorghum—Fine quality but not much grown.

Timothy—Short crop on account of the dry weather.

Clover—One of our best hay crops; above the average.

Prairie Hay—None.

Other Grains and Grasses—Some alfalfa is raised but only in patches where the ground has been carefully prepared has the yield been good.

Potatoes—The late crop is fairly good although there are some that did not get ripe. Plenty harvested for home use.

Vegetables—Good yield and good quality.

Apples—Almost a failure in this county.

Other Fruits—All small fruits were short on account of the dry weather.

Cattle—I believe there are more cattle in the county than a year ago. Farmers have not sold so many calves and many cattle have been shipped in from the southwest.

Horses—A good horse weighing 1,200 or 1,400 pounds will bring a good price. The foreign governments are buying many small horses. One agent bought twenty-five broncos yesterday.

Swine—Farmers have lost heavily through cholera this year.

Sheep—We have but very few sheep.

Poultry—Lots of poultry; farmers are making a specialty of this industry.

Drainage—Most of the farmers in this vicinity have tiled their lands and those who have not are tiling as fast as they can. In the southwestern part of the county many large ditches have been made.

Other Industries—Moscow, Muscatine county, has become a great watermelon and cantaloupe center. Several carloads were shipped this fall.

Lands—Most of our land is $200 land. Farmers are making good improvements upon their farms.

Report of Fair—Held August 18th-20th, inclusive. We had one rainy day but will pay out. Farmers are taking more interest each year.

O'BRIEN.

GEORGE GARDNER, SHELDON, SEPTEMBER 28, 1914.

Corn—Acreage is about 50 per cent of all grains. The stand is good and the crop is well matured. Average yield is estimated at about forty-five bushels per acre and the quality is good.

Oats—Estimated yield is about thirty-five bushels per acre; quality and weight fair to light.

Wheat—Very light acreage with fair yield and quality.

Rye—Practically none.

Barley—Acreage is light; quality fair to good. Average yield estimated at twenty-five bushels per acre.

Flax—None raised.

Buckwheat—I know of none.

Millet—Very little raised; quality and yield good.

Sorghum—But little raised; quality is good.

Timothy—Acreage is rather below the average; quality is good and the yield fair.

Clover—Clover hay crop is good; second crop is being cut mostly for hay.

Prairie Hay—None except slough hay, which is mostly a good crop.

Potatoes—Acreage is considerably below last year. Condition of crop about 75 per cent, estimated yield about ninety bushels per acre.

Vegetables—Generally good; quality excellent.

Apples—Early varieties good but generally light crop. Late varieties are poor to fair.

Cattle—Prices considerably higher than a year ago, especially for the dairy type. Not much of an increase in number and about the same number of feeders.

Horses—Mostly draft breeds being raised; prices average lower than a year ago.

Swine—Number raised will fall short on account of the heavy loss from cholera last year. Loss from cholera this year estimated at from 10 to 15 per cent.

Sheep—Gradual decrease; just a few small flocks of lambs being fed.

Poultry—About the average number; prices good.

Bees—Not many raised; honey crop poor to fair.

Drainage—Very little tiling done the past season.

Other Industries—In good prosperous condition.

Lands—Increasing in value. Prices range from $165 to $225 per acre. Rents will average between $6 and $7 cash or two-fifths share.

Report of Fair—Held August 25th-28th, 1914. The exhibits were the largest in the history of the association, as was also the attendance. Gate receipts were slightly under a year ago on account of rain. No tickets were sold on Thursday, which is the best and biggest day.

O'BRIEN.

R. CLIFTON, SUTHERLAND, OCTOBER 1, 1914.

General Condition of Crops and Season—Favorable conditions existed in the early spring; later we did not have enough rain and the crops ripened too early.

Corn—About three-fourths of an average crop. Not well filled but sound.

Oats—About three-fourths of a crop; too dry.

Wheat—Very little raised but the crop is fair.

Rye—Very little raised.

Barley—Fair crop but not a large acreage in this locality.

Flax—Scarcely any raised.

Buckwheat—I know of none.

Millet—Very little raised this year.

Sorghum—Seems to be a very good crop; more raised this year than usual.

Timothy—Average growth but the hot dry weather hurt it some.

Clover—A very good early crop; quality good.

Prairie Hay—None.

Potatoes—Early crop very good; the late crop will be fair.

Vegetables—A favorable crop of all kinds.

Apples—Trees in general did not blossom and there were no apples to speak of.

Other Fruits—Average.

Cattle—Not many beef breeds are raised in this locality. Dairy breeds are being given considerable attention.

Horses—Considerable attention is being paid to the draft breeds and fine horses are being produced.

Swine—Cholera has been prevalent and many have lost large numbers. The raising of swine is one of our chief industries.

Sheep—Some good flocks of sheep are kept in this locality but this industry is not growing very fast.

Bees—Some bee keepers take an interest in this industry but honey has been scarce, due to the dry weather.

Drainage—As a rule this county is well drained, having plenty of natural drainage. Some tiling has been done but nothing in the last three or four years as compared to some years past.

Lands—Steadily advanced in price; it now ranges from $125 to $250 per acre. Each year sees an advance.

Report of Fair—Held at Sutherland on September 9th-12th, inclusive. Great preparation had been made to have the best fair we had ever held but the first day it rained all day and each forenoon was either rainy or cloudy so that the people could not get started from any distance. We will fall short on expenses but considering the bad weather we feel it might have been worse.

PAGE.

J. C. BECKNER, CLARINDA, OCTOBER 20, 1914.

General Condition of Crops and Season—Season favorable in the early spring but dry in July and August.

Corn—Corn one-half to three-fourths of a crop. Late rains has damaged corn fodder.

Oats—Good oats; quality is fine and the straw extra good.

Wheat—The Hessian fly did considerable damage. The yield was from ten to thirty-five bushels per acre.

Barley—I know of none.

Flax—None.

Buckwheat—None.

Millet—Very little grown.

Sorghum—Not much grown.

Timothy—Fine quality but not a large acreage this year.

Clover—A light crop; quality good.

Prairie Hay—Very little left.

Other Grains and Grasses—Alfalfa was good this year and there was a larger acreage than usual.

Potatoes—A light crop.

Vegetables—Too dry for vegetables.

Apples—The poorest crop we have had in many years.

Other Fruits—Berries were fair,

Cattle—Are a little thin on account of short pasture.

Horses—About the usual number but not many selling this fall.

Swine—Not the usual number but they are doing well.

Sheep—An increasing industry.

Poultry—Doing fine.

Bees—Not many.

Drainage—Not as much as we need.

Lands—Not much changing hands and prices are about steady. A number of farms have sold at public sale.

Report of Fair—Held August 24th-28th, inclusive.

PAGE.

A. W. GOLDBERG, SHENANDOAH, OCTOBER 14, 1914.

General Condition of Crops and Season—Early season ideal; later too dry.

Corn—One-half to two-thirds of a crop.

Oats—Good.

Wheat—Good.

Rye—None.

Barley—None.

Timothy—Fair.

Clover—Good.

Other Grains and Grasses—Alfalfa good.

Potatoes—Fair.

Vegetables—Fair.

Apples—Very poor.

Other Fruits—Peaches and pears were good.

Cattle—Light.

Horses—Average.

Swine—Average.

Sheep—Light.

Poultry—Extra good.

Bees—None.

Drainage—Good.

Lands—Good quality; hard to buy at any price.

Report of Fair—Held August 10th-14th, inclusive. We made all expenses but seem to be unable to get much ahead.

POCAHONTAS.

E. A. ELLIOTT, FONDA, OCTOBER 21, 1914.

Corn—Full crop; good quality.

Oats—Good crop and good quality.

Wheat—Winter wheat very good and spring wheat fair.

Rye—Very little raised; quality good.

Barley—Small crop.

Flax—Very small acreage; quality good.

Buckwheat—Small acreage.

Millet—Heavy crop.

Sorghum—Fair crop.

Timothy—Quality good; average crop.

Clover—Heavy crop; quality good.

Prairie Hay—Fair crop.

Other Grains and Grasses—75 per cent of the average crop.

Potatoes—Early ones a light crop; good crop of late ones.

Vegetables—Average crop.

Apples—None.

Other Fruits—Less than average crop.

Cattle—Scarce; not a great many on feed.

Horses—Average number and of good quality. Prices range from $175 to $275 per head.

Swine—Unusually good lot of pigs.

Sheep—Not a large number of sheep in this county. Spring lambs are in a thrifty condition.

Poultry—Extra good.

Bees—Below the average.

Drainage—Our chief industry in this county.

Lands—Increasing in value, ranging in price from $110 to $200 per acre.

Report of Fair—Held August 4th-7th, inclusive. Exhibits fair; attendance good and racing fine.

POTTAWATTAMIE.

C. H. READ, AVOCA, OCTOBER 29, 1914.

General Condition of Crops and Season—Good.

Corn—Good.

Oats—Good.

Wheat—Fair.

Rye—Good.

Barley—Fair.

Flax—None.

Buckwheat—None.

Millet—Good.

Sorghum—None.

Timothy—Light.

Clover—Fair.

Prairie Hay—None.

Other Grains and Grasses—Good.

Potatoes—Fair.

Vegetables—Good.

Apples—Not many apples this year.

Other Fruits—Not very good.

Cattle—Good.

Horses—Good.

Swine—Not extra.

Sheep—Good.

Poultry—Good.

Bees—Good.

Drainage—Good.

Report of Fair—September 1st-4th, inclusive.

POWESHIEK.

JAMES NOWAK, MALCOM, OCTOBER 27, 1914.

General Condition of Crops and Season—Season was a little late to start with but May, June and July were excellent months for crops of all kinds. It was a little too dry the last week in July and the first two weeks in August but we have had plenty of rain since September 1st.

Corn—Good quality. Average yield for the county is forty-two and one-half bushels per acre; price sixty-five cents.

Oats—A fair yield and fair quality; will average thirty-five bushels per acre.

Wheat—Will average about twelve bushels per acre; fair quality. Price ninety cents.

Rye—Will average about fifteen bushels per acre; fair quality. Price fifty-five cents.

Barley—Will average twenty-five bushels per acre; good quality. Price fifty-five cents.

Flax—None raised here.

Buckwheat—Very little grown.

Millet—Very little raised.

Sorghum—Not much raised; good yield.

Timothy—Will yield about two and one-fourth tons per acre; quality good.

Clover—Will yield about two and one-half tons per acre; quality good.

Prairie Hay—None.

Other Grains and Grasses—There was a good yield. Pastures have been fine since September 15th.

Potatoes—Selling at sixty cents per bushel. There was a fair yield of potatoes and they are of good quality.

Vegetables—All kinds were very good.

Apples—About 30 per cent of a normal crop. Not very good quality.

Other Fruits—Lots of grapes and small fruits. Some peaches and plums.

Cattle—Bring a good price and there is a strong demand.

Horses—Bringing big prices and there is a strong demand.

Swine—Some cholera reported. Prices are good and the demand is strong.

Sheep—Not many raised here. Prices are fair.

Poultry—Good prices and lots of poultry marketed. Eggs also bring a good price.

Bees—Good yield of honey.

Drainage—Lots of drain tile being put in.

Other Industries—All industries are profitable. An aeroplane factory in this county is a new line; its product today holding the U. S. record for longest continuous flight.

Lands—Increasing in price and usually sold as quick as offered for sale. Prices range from $125 to $225 per acre.

Report of Fair—Fair was held on August 25th-27th, inclusive. We had good exhibits and a good crowd. The fair was a success.

POWESHIEK.

I. S. BAILEY, JR., GRINNELL, OCTOBER 14, 1914.

General Condition of Crops and Season—Condition of crops good; season quite dry up to about the first of October. Since then we have had plenty of rain and fall feed is in abundance.

Corn—Good crop. No frost at this time.

Oats—Fair crop; yield from twenty-five to fifty bushels per acre; quality excellent.

Wheat—Winter wheat yielded from twenty to thirty-five bushels per acre. Very little spring wheat sown.

Rye—None raised.

Barley—Fair crop; yield from fifteen to thirty-five bushels per acre; quality good.

Flax—None raised.

Buckwheat—None raised.

Millet—None raised.

Sorghum—None raised.

Timothy—Quality good; general average two tons per acre.

Clover—Good crop; some has been saved for seed; yield quite light; quality good.

Prairie Hay—None raised.

Other Grains and Grasses—Two cuttings of alfalfa and yielded about two tons per acre to the cutting. So far only a limited acreage.

Potatoes—Poor crop; quality very poor and yield poor. Not over twenty-five bushels per acre on the average.

Vegetables—Quite good; quality excellent.

Apples—Nearly a failure.

Other Fruits—Cherries good; grapes fair; plums scarce and peaches a good yield but very poor quality.

Cattle—Less than normal. Condition quite good for this season of the year.

Horses—Condition good. Good draft horses bringing from $175 to $200. More colts have been raised the last few years than usual.

Swine—All in good condition. Very little cholera reported this year.

Sheep—In good condition but not many raised in this county.

Poultry—In excellent condition and more poultry is being raised than formerly.

Bees—In good condition. Very few in this locality.

Drainage—More drainage is being put in every year and the results from the same are excellent.

Other Industries—Our manufacturing plants are not in the best of condition at this time and many are not running full time.

Lands—What land is changing hands brings stronger prices than one year ago. Good improved farms in this locality sell from $175 to $250 per acre.

Report of Fair—Held September 8th-11th, inclusive, at Grinnell. On account of the rain at that time our fair was not very successful financially.

SAC.

GUS STROHMEIER, SAC CITY, OCTOBER, 1914.

General Condition of Crops and Season—Very good.

Corn—Average crop in best of condition and all farmers busy husking. Good quality.

Oats—Good and a good yield.

Wheat—Not much here but quality good and heavy.

Rye—Not much here but quality good.

Barley—Good yield and quality good.

Flax—None to speak of.

Buckwheat—Very little grown here.

Millet—Good yield but not very much grown this year.

Sorghum—Small amount but extra good. One sorghum factory here.

Timothy—Good quality and heavy.

Clover—Extra good and new seedings in fine condition.

Prairie Hay—Very little here.

Other Grains and Grasses—Alfalfa fair crop. Pastures good.

Potatoes—Light early yield but good late yield.

Vegetables—Good.

Apples—Only fair.

Other Fruits—Medium crops.

Cattle—In good shape. Some feeding.

Horses—In good condition and doing well. Mules are beginning to be raised here.

Swine—Not extra good; troubled with hog diseases, and lots being lost.

Sheep—In good shape and quite a few being fed.

Poultry—In best of condition and lots raised.

Bees—Not extra good, yield very light for honey.

Drainage—Most of land drained.

Other Industries—All doing well and are kept busy.

Lands—Extra good and good prices but not much changing hands.

Report of Fair—The largest in our history. Fair has been held here for forty-two years. The gate receipts were $2,000 more than any previous year. Good weather and best of attractions and all well satisfied. Exhibits very good and many.

STORY.

E. H. GRAVES, AMES, OCTOBER 15TH.

General Condition of Crops and Season—First part of season very dry making a short crop in many of the grains, corn and hay. Later in season too much rain causing damage to corn in field and to fodder.

Corn—Average forty to sixty-five bushels.

Oats—Average forty-five to sixty bushels.

Wheat—Average twenty to forty bushels.

Rye—Very little raised in this locality.

Barley—Very little.

Flax—None.

Buckwheat—Only small amount.

Millet—Good crop; small acreage.

Sorghum—Only in small patches for winter feed.

Timothy—Good crop in excellent condition.

Clover—Good crop in excellent condition.

Prairie Hay—Scarcely any in this locality.

Potatoes—Not much of a market crop in this locality.

Vegetables—Good.

Apples—Scarcely any summer and fall varieties this season. The Wealthy which is usually a good crop was a minus quantity this season. Some winter apples grown, such as the Ben Davis, Grimes Golden and Willow Twig.

Cattle—Usual number. Mostly of beef breeds. Principally in small bunches.

Horses—Principally draft type raised.

Swine—Can not estimate number. Quality good and entirely free from cholera in this section of Story county.

Sheep—Only a few are raised.

Poultry—Lots of poultry.

Drainage—Land mostly well drained either by tile or drainage ditches.

Lands—Farms selling from $165 to $275 per acre. Small tracts near town selling at $300 to $400 per acre.

Report of Fair—Date held, September 29th, 30th, October 1st. Perfect weather conditions. Attendance estimated 10,000. Was a decided success.

SIOUX.

ALBERT HEEMSTRA, ORANGE CITY, OCTOBER 17, 1914.

General Condition of Crops and Season—The season has been favorable until July 4th. After that rather too hot and dry for late crops and pasture.

Corn—Will yield from thirty-five to forty-five bushels, a little uneven.

Oats—A little below the average yield. About thirty-five bushels.

Wheat—Poor on account of rust. Yield from eight to fifteen bushels.

Rye—Very little raised.

Barley—An average crop.

Flax—None.

Buckwheat—None raised.

Millet—Good for hay. Very little raised for seed.

Sorghum—A little raised for feed.

Timothy—Below the average.

Clover—Good crop, especially for hay.

Prairie Hay—Average yield.

Other Grains and Grasses—Fairly good.

Potatoes—Early ones good; late ones below the average on account of the drouth in July and August.

Vegetables—Fairly good.

Apples—Poor; about 40 per cent of a crop.

Other Fruits—Below the average.

Cattle—Below the average, both as to number and quality.

Horses—The average number and in good demand.

Swine—The usual number and they are in good condition.

Sheep—About the usual number and in good condition.

Poultry—Lots of poultry and in healthful condition.

Bees—Good.

Drainage—Good.

Other Industries—Have been profitable this season.

Lands—Selling from $175 to $250 per acre but not much changing hands. Very little for sale.

Report of Fair—Held September 16th-18th, inclusive. Weather was fine and attendance very good. We had the best fair we have had for many years.

TAMA.

A. G. SMITH, TOLEDO, OCTOBER 8, 1914.

Corn—Above average crop; good quality.

Oats—Average crop.

Wheat—Spring wheat average crop; winter wheat best.

Rye—Average crop.

Barley—Not much sown.

Flax—None.

Buckwheat—But little grown.

Millet—Good crop.

Sorghum—Very little made.

Timothy—Good crop.

Clover—Good crop.

Prairie Hay—Very little grown.

Other Grains and Grasses—Pastures cut short in July and August. September rains have made all grasses good.

Potatoes—Early crop excellent. Late crop damaged by drouth.

Apples—Light crop.

Other Fruits—Average crop.

Cattle—The grade is improving. No disease. Number hardly up to average. High in price. Much she stock shipped out that should have been kept for breeding purposes.

Horses—Usual number on hand. Condition good. Improvement being made by the leading draft breeds, prices high. No disease.

Swine—Usual number of young pigs. But little disease, compared with last year. Prices are strong.

Sheep—Not many in the county but of good kinds.

Poultry—Good many raised but disease is very common.

Bees—But very few.

Drainage—Lots of tile being used in this county.

Other Industries—Profitable in every respect.

Lands—Prices are higher each year selling from $100 to $300 per acre. Good demand for corn and grass lands.

Report of Fair—Held September 22 to 25, 1914. The fair was a great success. Ideal weather. All departments were filled. Cattle, over one hundred of the best. Horses, about 125. Swine pens full. Races especially good, all classes filled. The Art Hall was filled to over flowing. Grains and seed in abundance. No accidents. The facts are this was the best fair we have ever held. The proposition of the county buying the land for agricultural purposes will be voted on at the regular election in November.

TAYLOR.

C. N. NELSON, BEDFORD, SEPTEMBER 20, 1914.

General Condition of Crops and Season—Season very dry.

Corn—Big acreage. Probably ten per cent above average.

Oats—Average thirty-five bushels.

Wheat—Average probably twenty bushels.

Rye—None to speak of.

Barley—None.

Flax—None.

Buckwheat—None.

Millet—None.

Sorghum—Very little.

Timothy—Average about one ton per acre. Price $15 per ton.

Clover—Pretty badly winter killed. First crop nearly failure. Too dry; second crop good.

Other Grains and Grasses—Some alfalfa. Crop good.

Potatoes—One-third crop worth $1 per bushel.

Vegetables—Early vegetables good but late damaged by drouth.

Apples—Very few orchards with any apples to speak of.

Other Fruits—Strawberries fair crop. Cherries half crop. Blackberries and raspberries none.

Cattle—More cattle in the county than a year ago. No cattle on feed to speak of.

Horses—Good horses are scarce.

Swine—Crop of pigs above normal. Most of the fat hogs out of county at present.

Sheep—Fine lot of lambs. Good many sheep in county, but can't say how many.

Poultry—Lots of chickens. Not many turkeys.

Bees—Hardly enough honey made to winter the bees.

Drainage—Nothing.

Lands—Considerable lands changing hands. Good farming lands range in price from $90 to $150 an acre depending on location and improvements.

Report of Fair—Weather good but hot and dry. Good races. Good show of cattle. Fair display of agricultural products. Good attendance. In all, most successful fair held for the past twenty years. Paid everything and had a little money left. Dates July 28th to 31st.

VAN BUREN.

D. A. MILLER, MILTON, OCTOBER 9, 1914.

General Condition of Crops and Season—Crops good considering midsummer being extremely dry. Plenty of moisture after middle of September.

Corn—Quality good. Average yield about forty-five bushels. Some better than last season.

Oats—An average yield and of a good quality.

Wheat—Yield excellent and quality good.

Rye—A short crop on account of small acreage.

Barley—None raised in this county.

Flax—None raised.

Buckwheat—Small acreage but of good quality.

Millet—Good quality but not so much as last season.

Sorghum—Short crop.

Timothy—A good average crop. Hay excellent; seed yield quite good.

Clover—Good quality but short on seed.

Prairie Hay—None.

Other Grains and Grasses—Alfalfa is being tried here and promises to make good.

Potatoes—Early potatoes half crop. Late ones very poor.

Vegetables—Good yield and quality excellent.

Apples—Short crop; what we have are badly worm eaten.

Other Fruits—Smaller fruits of excellent quality and good yield.

Cattle—About usual number. Shipments of finished stuff below average; feeders and stockers in good demand at high prices.

Horses—A slow sale, with about the usual number.

Swine—Fine lot of spring pigs. No sickness among hogs here. Prices for stock and fat hogs good.

Sheep—Industry increasing.

Poultry—This industry is par excellence.

Bees—No large apiaries. Quite a number of people have a few colonies.

Drainage—Good natural drainage.

Other Industries—Conditions good with brighter prospects ahead.

Lands—Quite a number of farms changing hands because we have some of the best lands in the country. Prices from $125 to $200 per acre.

Report of Fair—Fair held at Milton, Iowa., September 16th-19th, 1914. We only had one good day on account of rain which made our attendance light and receipts not enough to pay expenses. Otherwise we would have had an excellent fair.

WAPELLO.

H. R. BAKER, ELDON, OCTOBER 28, 1914.

General Condition of Crops and Season—Unusually early and favorable season for all crops. Wheat marketed from machines on July 3d, ten days earlier than usual. Too dry during July and August.

Corn—Good average crop, good quality and pretty good acreage. A little short on account of dry weather in August.

Oats—Good yield and good quality.

Wheat—Above the average in quality and acreage.

Rye—Very good quality; not much sown.

Barley—None.

Flax—None.

Buckwheat—None.

Millet—Not much sown.

Sorghum—Good, but short acreage.

Timothy—Good crop of good quality. Average about one and one-half tons to acre.

Clover—Heavy crop of clover, and of fine quality.

Prairie Hay—None.

Other Grains and Grasses—Some experiment with alfalfa which is proving profitable and satisfactory.

Potatoes—Light crop, poor quality.

Vegetables—Fair.

Apples—Hardly an average crop.

Cattle—About the usual amount of cattle in the country, not much improvement.

Horses—County pretty well stocked but room for improvement in quality.

Swine—Usual number of hogs in this locality in healthy condition.

Sheep—Our farmers do not take much interest in sheep business.

Poultry—Big crop of poultry in good condition.

Bees—None.

Drainage—Some drainage, but not as much as should be.

Lands—Not much changing hands. Land ranging from $75 to $200 per acre.

Report of Fair—Held August 11th to 14th. One of the best ever held. Good attendance, fine weather and exhibits in every department well represented.

WRIGHT.

ED HOOD, CLARION, OCTOBER 20, 1914.

General Condition of Crops and Season—Good.

Corn—Good.

Oats—Good.

Wheat—Fair.

Rye—Fair.

Barley—Fair.

Millet—Good.

Sorghum—Good.

Timothy—Good.

Clover—Good.

Prairie Hay—Good.

Potatoes—Poor.

Vegetables—Good.

Apples—Poor.

Other Fruits—Poor.

Cattle—Good.

Horses—Good.

Swine—Good.

Sheep—Good.

Poultry—Good.

Bees—Poor.

Drainage—Fair.

Other Industries—Good.

Lands—Prices good. Range in price from $50 to $225 per acre.

Report of Fair—Date held, August 26th to 29th. Good fair but bad weather for two days.

WARREN.

JOE M'COY, INDIANOLA, OCTOBER 15, 1914.

General Condition of Crops and Season—The first part of the crop season was fine. Plenty of moisture up to July 1st, then turned very dry. Small grain was good but corn only about one-half a crop.

Corn—About one-half crop and the continued wet weather of late is putting the quality down.

Oats—A pretty good crop.

Wheat—Good crop and quality fine. Threshing all done early. Price good.

Rye—Just fair.

Barley—Not much raised.

Flax—None.

Buckwheat—None.

Millet—Not much sown.

Sorghum—None to amount to anything planted.

Timothy—Very little threshed as it was most mixed with clover. A fair crop.

Clover—Not an average crop.

Prairie Hay—None.

Potatoes—Late ones will be good.

Vegetables—Plenty.

Apples—Not many.

Other Fruits—Plenty of peaches and cherries.

Cattle—More on hand than a year ago.

Horses—About the same in numbers as a year ago but prices not so good.

Swine—A very good spring pig crop but very little cholera.

Sheep—Not many.

Poultry—We have a great many fancy chickens and plenty of common kind.

Bees—Not many.

Drainage—Considerable tiling done this season.

Lands—Not much changing hands. Prices range from $75 to $200 per acre.

Report of Fair—Date held, August 18th-21st. Had a very good attendance and a good live stock and agricultural show. Think the best all around show we ever had. Attractions poor.

WAYNE.

LOREN JOHNSTON, SEWAL, OCTOBER 27, 1914.

Corn—Average forty bushels per acre.

Oats—Average thirty-five bushels per acre.

Wheat—Average twenty-nine bushels per acre.

Rye—Not much.

Barley—None.

Flax—None.

Buckwheat—None.

Millet—Good but not much sowed.

Sorghum—Poor crop.

Timothy—Average one and one-half tons per acre.

Clover—Average one and one-half tons per acre.

Prairie Hay—None.

Other Grains and Grasses—Pasture short on account of dry weather in fore part of season.

Potatoes—Poor crop.

Vegetables—Poor with the exception of tomatoes.

Apples—Very scarce.

Other Fruits—Too dry weather.

Cattle—Scarce and high.

Horses—A good many. Good ones selling high.

Swine—Very good supply. No cholera that I know of.

Sheep—A few flocks kept.

Poultry—Good.

Bees—Scarce.

Drainage—Natural.

Other Industries—None.

Lands—Not much land changing hands. Average prices about $100 per acre.

Report of Fair—Held September 3d, 4th and 5th.

WEBSTER.

A. G. RIGBY, FORT DODGE, OCTOBER 15, 1914.

General Condition of Crops and Season—Conditions the early part of the spring and summer were very favorable for all kinds of crops with abundant moisture and plenty of sunshine. Soil in excellent condition. Drouth during the latter part of summer and early fall cut the yield of the later maturing crops. Quality of all crops generally is good.

Corn—Quality good. Yield cut from 20 to 50 per cent in different parts of county on account of drouth. Practical freedom from frost to date gives all corn splendid chance to mature.

Oats—Splendid quality and good yield. Many fields reported fifty to sixty bushels to the acre.

Wheat—Not a large acreage, but quality and yield good.

Rye—Not much rye raised in this county, but what is raised is good quality and fair yield.

Barley—Small amount raised. Quality and yield above average.

Flax—None raised in this county that I know of.

Buckwheat—Not much raised this year.

Millet—Acreage small, but quality and yield excellent.

Sorghum—Hurt by drouth; small acreage.

Timothy—Excellent quality and fairly large yield per acre.

Clover—Old seeding, good quality and yield; new seeding, not up to average, probably on account of dry weather. Second crop of clover cut short on account of lack of rain.

Prairie Hay—Practically none raised.

Other Grains and Grasses—None to speak of raised in county.

Potatoes—A very short crop on account of drouth.

Vegetables—Poor year for vegetables on account of the very dry season.

Apples—Practically no apples on account of late frosts killing buds and unfavorable season generally.

Other Fruits—Short crop on account of unfavorable conditions.

Cattle—This is not a dairying county, though more attention is being given to this branch of stock raising. More beef cattle are raised and more attention paid to pure breeds than formerly. Herefords, Galloways, Red Polls and Shorthorns are in favor.

Horses—Draft horses, such as Belgians and Percherons, are raised to considerable extent, resulting in a general raising of the type of grade drafts raised by the average farmer.

Swine—A considerable number of hogs of different breeds are raised in the county, there being a large number of breeders of pure bred. There has been some cholera reported, but vaccination has generally stopped the spread of the disease.

Sheep—Some sheep raised, but not generally.

Poultry—A great deal of poultry is raised in this county.

Bees—Not a favorable season for bees on account of extreme dry weather.

Drainage—A great deal of drainage, open ditches. Much tiling has been done this season.

Other Industries—Clay products, tile, brick, etc.; gypsum products, manufacturing industries of considerable variety and extent gives employment to many people, and have all generally been successful. The business conditions of the last few months have had the effect to curtail activity in some lines of endeavor, and while there is something of a depression existing at the present time there is no cause for alarm, as business is well entrenched and in a generally healthy condition.

Lands—Land values range from $75 to $200 per acre for agricultural lands, depending on location and improvements. Good roads have a decided effect on farm values and the people are beginning to realize this to a greater degree than ever. Good cement bridges and culverts are being built and the roads graded and improved.

Report of Fair—The fair was held August 12, 13 and 14, 1914, at the Mineral City Driving Park, the ground being leased. No attempt was made to get agricultural exhibits or live stock, except horses and cattle, on account of the short time intervening between the time of the decision to hold a meeting and the date previously selected by the defunct Webster County Fair Association. The new organization was much handicapped on account of these adverse conditions and did not have time to work up public interest and confidence so necessary to co-operation and attendance, and the result was a considerable shortage in receipts necessary to pay all the expenses. A splendid race meeting and stock show of high standards was held and the people were pleased.

WINNEBAGO.

M. C. WHEELER, FOREST CITY, OCTOBER 21, 1914.

Corn—Average crop. Good average.

Oats—About thirty bushels to acre. Little under weight.

Wheat—Only fair crop, rather light, medium quality, affected by black rust.

Rye—Very small acreage, but good quality.

Barley—Good crop, little off color; otherwise, quality good.

Flax—Very little raised in county.

Buckwheat—Very little raised. Good quality, but damaged by fall rains.

Millet—Not much raised; heavy yield; damaged by rains.

Timothy—Good crop and quality; acreage for seed very light.

Clover—Heavy; fine stand.

Prairie Hay—Good; fine quality.

Potatoes—Good yield; large acreage for this county.

Vegetables—Fine.

Apples—Very scarce in this county.

Other Fruits—Good ordinary yield.

Cattle—Cattle did fairly well. Good number fattened in this county. Numerous registered Shorthorn and black herds.

Horses—Fair quality; fair condition. Farmers are raising more and better quality.

Swine—About average crop; good quality. Tendency is for better hogs. Some cholera, but not nearly as bad as last year. Double treatment of vaccination quite successful.

Sheep—Very few raised. Do well here. On the increase.

Poultry—Plenty of poultry.

Bees—Not generally raised; did quite well.

Drainage—Much drainage being done.

Lands—Increased in value this year at least $10 per acre.

Report of Fair—Fair held September 8, 9, 10, 11, 1914. Good fair; fine attractions; poor weather; did not pay out.

WINNESHIEK.

L. M. ENGER, DECORAH, OCTOBER 14, 1914.

General Condition of Crops and Season—Fair to first class.

Corn—Very heavy crop, in fine condition.

Oats—Crop light on account of extreme heat and some drouth at the time of ripening.

Wheat—Very little raised. What was raised yielded a fair to good crop.

Rye—Very little raised.

Barley—A fair crop.

Flax—Very little.

Buckwheat—None.

Millet—Good crop.

Sorghum—Good yield, but little cultivated.

Timothy—Very good.

Clover—Very good.

Prairie Hay—No prairie in Winneshiek now.

Other Grains and Grasses—Hay generally heavy.

Potatoes—Yield light.

Vegetables—Generally good in Winneshiek.

Apples—Practically a failure this year.

Other Fruits—Grapes and strawberries did well, but there seemed to be a general shortage in fruits.

Cattle—Have been doing well. No disease reported. Pastures have been good. General interest is manifest in improvement of stock.

Horses—Doing well. The renowned "Winneshiek Horse" holds his own record well this year.

Swine—Doing well; only a few scattered cases of cholera reported during the season.

Sheep—Doing well this year, and better breeds are being introduced.

Poultry—Doing well, and the breeds are fast improving, as there is great interest taken in raising the better class.

Drainage—No drainage in Winneshiek.

Other Industries—Farming is the principal occupation. Short of manufacturing.

Lands—Average value, $100 to $110, with prices rising.

Report of Fair—Held at Decorah, September 8, 9, 11, 12, 1914. September 10th, which would have been the great day for attendance, was lost on account of rain.

WORTH.

T. O. GROE, NORTHWOOD, OCTOBER 24, 1914.

General Condition of Crops and Season—General condition of crops good. The hot, dry weather cut down the yield of oats and wheat; corn good, crop badly blown down by wind. Rains have made fall pastures the best in years.

Corn—A little better than an average crop. A frostless fall has ripened all corn. Will yield about forty bushels per acre on an average. Some fields down badly.

Oats—Fair; not up to average.

Wheat—Light crop; too hot and dry.

Rye—Not much raised.

Barley—Fair crop.

Flax—Not much raised.

Buckwheat—Very little raised.

Millet—Very little raised.

Sorghum—Very little grown.

Timothy—Good crop and went into stacks and barns in nice shape.

Clover—First crop fine and secured in good condition; very little cut for seed.

Prairie Hay—None in the county to speak of.

Potatoes—Fair crop.

Vegetables—All very fine and better than average.

Apples—Very light crop.

Other Fruits—All fruits a light crop.

Cattle—In fine condition, but scarce; not many going into the feed lots.

Horses—Quality improving, bringing good prices.

Swine—The number of spring pigs below the average on account of cholera last season. Some cholera reported, but not as much as last year. Quality good.

Sheep—Sheep raising not followed to any great extent.

Poultry—A great deal of poultry raised in the county. Quality good.

Bees—Very few bees kept.

Drainage—Large amount of tile put in the ground, with excellent results.

Other Industries—Agricultural county. Very few factories.

Lands—In good demand. Not so much changing hands as last season. Prices for improved farms about $100 per acre.

Report of Fair—Fair held at Northwood, August 27th-29th. Some rain first day. Attendance good on second and last day. Good exhibit of stock and grains. Fair a success. Will close the year with a balance in treasury.

WOODBURY.

JOE MORTON, OCTOBER 20, 1914.

Corn—The corn crop varies considerably throughout the county. In the northwestern part of the county the yield will not average more than thirty bushels per acre. In the northeastern part the average is probably forty to fifty bushels per acre. The same is also true of the southern part of the county.

Oats—The oat crop was greatly damaged by hot weather shortly before it ripened, and the average yield will not exceed thirty bushels per acre.

Wheat—Comparatively little wheat is grown in this county, except in a very few restricted localities where winter wheat is grown quite extensively. This crop yielded well. The average was in the neighborhood of thirty-five bushels per acre. Spring wheat averaged about fifteen bushels per acre.

Rye—Rye was a fair crop, with an average yield of about twelve bushels per acre.

Barley—The yield of barley was between twenty-five and thirty bushels and a very good quality.

Flax—No flax raised in Woodbury county.

Buckwheat—No buckwheat.

Millet—Millet yielded very well as a hay crop, the average being from three to four tons per acre.

Sorghum—Late sorghum produced from three to four tons per acre. Early sorghum was injured by the drouth and did not do as well as usual.

Timothy—Timothy on good land yielded one and one-quarter tons per acre, and from this on down to three-quarters ton per acre. However, the crop was up to the usual standard.

Clover—Clover produced about one and one-half tons per acre, and in some fields a second crop was obtained and was used for either hay or seed. The seed yield of this second crop was about one-half bushel per acre.

Prairie Hay—A normal yield of about three-quarters ton per acre.

Other Grains and Grasses—Alfalfa produced three crops, and on the better lands the average was about four tons per acre. In some sections the second crop was very small, and, on the other hand, where good stands were produced, four cuttings were obtained, and the average was four tons per acre.

Potatoes—Potato crop about 60 per cent of normal.

Vegetables—Early vegetables were injured by the drouth. Late vegetables yielded well, the average being, perhaps, 75 per cent.

Apples—The apple crop was somewhat damaged by the hot winds and dry weather during the summer.

Other Fruits—There was a good crop of cherries and a fair yield of early small fruits.

Cattle—Cattle are in good condition, as pastures have not been overstocked. Fewer cattle will be fed than usual on account of money scarcity, it being practically impossible for farmers to borrow money with which to buy cattle.

Horses—Horse values are normal, with a good demand for horses of the heavy type.

Swine—While cholera has been much less destructive this year, the number of pigs is comparatively small. The spring pigs were not as healthy as usual and a large percentage of them died during the summer months. The fall pigs are doing fairly well. The estimate for the 1914 crop is about 75 per cent of normal.

Sheep—There is much interest manifested on the part of farmers in sheep feeding this fall. Sioux City is fast becoming one of the best sheep markets in the country. The Sioux City Stock Yards Company have built new sheep barns and are in better shape to handle sheep than ever before.

Poultry—Poultry was unusually good. There is a great deal of interest taken by the farmers in Woodbury county in the raising of poultry, and many are making a success of the business.

Bees—The honey crop is about 65 per cent of normal. Bee pasture was very scarce throughout the season and the bees also suffered more than usual from foulbrood.

Drainage—Very little has been done in the way of drainage this year, as all farms are well equipped with tile, etc.

Other Industries—All industries have enjoyed a healthy business during the last twelve months. The volume of business has been greater than any time in past years, and there is a general feeling of satisfaction among manufacturers.

Lands—Land has increased about $10 per acre.

Report of Fair—The Interstate Live Stock Fair was held September 21st-26th and enjoyed unusually good weather and had a very satisfactory attendance. While the racing was not up to the standard, the exhibits were unusually good, and, from the standpoint of quality, were not surpassed by any fair in the country. The financial report will show a satisfactory profit, and, in all, the fair was a success.

A glimpse of the beautiful driveway on the college campus, Iowa State College of Agriculture and Mechanic Arts, Ames, Iowa.

PART XIV.

Directory of Associations and Organizations Representing Agricultural Interests in Iowa.

Iowa Department of Agriculture—President, C. E. Cameron, Alta; Vice-President, O. A. Olson, Forest City; Secretary, A. R. Corey, Des Moines; Treasurer, W. W. Morrow, Afton.

Iowa State Horticultural Society—President, E. P. Spencer, Randolph; Vice-President, W. B. Chapman, Correctionville; Secretary and Librarian, Wesley Greene, Des Moines; Treasurer, F. O. Harrington, Williamsburg.

Iowa Forestry and Conservation Association—President, T. C. Stephens, Sioux City; Vice-President, Fred Lazell, Cedar Rapids; Secretary, G. B. MacDonald, Ames; Treasurer, Mrs. H. J. Taylor, Sioux City.

Society of Iowa Florists—President, O. H. Herman, Council Bluffs; Vice-President, Homer Richey, Albia; Secretary-Treasurer, Wesley Greene, Des Moines.

Western Grain Dealers Association—President, F. D. Milligan, Jefferson; Vice-President, S. W. Wilder, Cedar Rapids; Secretary-Treasurer, George A. Wells, Des Moines.

Iowa Corn and Small Grain Growers Association—President, F. D. Steen, West Liberty; Vice-President, J. H. Petty, Elliott; Secretary, H. L. Eichling, Ames; Treasurer, Ray Bennett, Ames.

Iowa Beef Producers' Association—President, R. W. Cassady, Whiting; Vice-President, C. W. Huntley, Chariton; Secretary, Ledru Willitts, Mt. Pleasant; Treasurer, C. S. Hechtner, Chariton.

Iowa Shorthorn Breeders' Association—President, C. A. Oldsen, Wall Lake; Vice-President, C. L. McClellan, Lowden; Secretary and Treasurer, Howard Vaughn, Marion.

Iowa Swine Breeders' Association—President, F. J. Sexsmith, Orient; Vice-President, C. A. Brooks, Washington; Secretary-Treasurer, M. P. Hancher, Rolfe.

Iowa Draft Horse Breeders' Association—President, Wm. Crownover, Hudson; Vice-President, Charles Irvine, Ankeny; Secretary, G. E. O'Brien, Des Moines; Treasurer, M. J. Nelson, Cambridge.

Iowa Aberdeen Angus Cattle Breeders' Association—President, W. S. Austin, Dumont; First Vice-President, R. W. Franks, Renwick; Second Vice-President, O. V. Battles, Maquoketa; Secretary-Treasurer, W. J. Miller, Newton.

Iowa State Poultry Association—President, Harry W. Atkins, Davenport; First Vice-President, E. D. Monilow, Cedar Rapids; Secretary, E. E. Richards, Cedar Rapids; Treasurer, Geo. Phillips, Des Moines.

Iowa Sheep Breeders and Wool Growers' Association—President, C. W. Moore, Cedar; First Vice-President, A. J. Blakely, Grinnell; Secretary, V. C. Warner, Bloomfield; Treasurer, G. W. France, Oskaloosa.

Iowa Shropshire Breeders' Association—President, O. H. Peasley, Indianola; Vice-President, Carlos Fawcett, Springdale; Secretary, M. G. Thornburg, Ames.

Iowa State Highway Commission—Chairman, A. Marston, Ames; Commissioner, J. W. Holden, Scranton; Commissioner, H. C. Beard, Mount Ayr; State Highway Engineer, Thos. H. MacDonald; Consulting Bridge Engineer, J. E. Kirkham, Ames.

Corn Belt Meat Producers' Association—President and Organizer, S. M. Corrie, Ida Grove; Vice-President, R. M. Gunn, Buckingham; Secretary, H. C. Wallace, Des Moines; Treasurer, Chas. Goodenow, Wall Lake.

Iowa State Dairy Association—President, W. B. Quarton, Algona; Vice-President, W. H. Chapman, New Hartford; Secretary, J. J. Ross, Iowa Falls; Treasurer, E. T. Sadler, Waterloo.

Iowa Bee Keepers' Association—President, C. E. Bartholomew, Ames; Vice-President, B. T. Bleasdale, Des Moines; Secretary-Treasurer, S. W. Snider, Center Point.

COUNTY AND DISTRICT AGRICULTURAL SOCIETIES AND FAIR ASSOCIATIONS IN IOWA.

Adair—Adair County Agricultural Society, Greenfield; President, John M. Wilson, Menlo; Secretary, F. A. Gatch, Greenfield.

Adams—Adams County Agricultural Society, Corning; President, S. M. Ritchey, Corning; Secretary, M. L. Schafroth, Corning.

Audubon—Audubon County Agricultural Society, Audubon; President, Geo. Foley, Audubon; Secretary, L. C. Bagley, Audubon.

Benton—Benton County Agricultural Society, Vinton; President, C. S. Harper, Vinton; Secretary, A. B. Allen, Vinton.

Black Hawk—Dairy Cattle Congress, Waterloo; President, J. R. Vaughan, Waterloo; Secretary, Hugh G. Van Pelt, Waterloo.

Bremer—Bremer County Fair Association, Waverly; President, Bate Cornforth, Waverly; Secretary, J. Q. Lauer, Waverly.

Buchanan—Buchanan County Agricultural Society, Independence; President, A. N. Todd, Independence; Secretary, A. G. Rigby, Independence.

Buena Vista—Buena Vista County Agricultural Society, Alta; President, L. Christensen, Alta; Secretary, Roy H. Wilkinson, Alta.

Butler—Butler County Agricultural Society, Allison; President, John Coster, Shell Rock; Secretary, W. C. Shepard, Allison.

Calhoun—Calhoun County Fair Association, Manson; President, J. C. Hoag, Manson; Secretary, C. G. Kaskey, Manson.

Calhoun—Rockwell City Fair Association, Rockwell City; President, Andrew Stewart, Rockwell City; Secretary, C. O. Dixon, Rockwell City.

Cass—Massena District Fair Association, Massena; President, S. D. Wychoff, Massena; Secretary, D. P. Hogan, Massena.

Carroll—Carroll Fair and Driving Park Association, Carroll; President, Frank Beiter, Carroll; Secretary, Peter Stephany, Carroll.

Cedar—Tipton Fair Association, Tipton; President, A. U. Hemingway, West Branch; Secretary, C. F. Simmermaker, Tipton.

Cerro Gordo—Northern Iowa Agricultural Society, Mason City; President, Chas. R. Hamstreet, Clear Lake; Secretary, C. H. Barber, Mason City.

Chickasaw—Chickasaw County Fair, New Hampton; President, P. H. Brannon; Secretary, F. D. Griffin, New Hampton.

Chickasaw—Big Four Fair Association, Nashua; President, W. A. Granger, Nashua; Secretary, C. L. Putney, Nashua.

Clay—Clay County Fair and Picnic, Spencer; President, Chas. Gilmore, Sioux Rapids; Secretary, T. B. Peest, Spencer.

Clayton—Clayton County Agricultural Society, National; President, Herb Brownson, McGregor; Secretary, Henry Luehsen, Garnavillo.

Clayton—Elkader Fair and Track Association, Elkader; President, E. C. Ehrhardt, Elkader; Secretary, Henry Koehn, Elkader.

Clinton—Clinton County Agricultural Society, De Witt; President, G. W. Smith, De Witt; Secretary, G. H. Christensen, De Witt.

Crawford—Crawford County Fair Association, Arion; President, Wm. Eggers, Arion; Secretary, O. M. Criswell, Arion.

Des Moines—Burlington Tri-State Fair, Burlington; President, J. F. Deems, Burlington; Secretary, Geo. R. Holcombe, Burlington.

Fayette—Fayette County Agricultural Society, West Union; President, J. S. Smith, West Union; Secretary, E. A. McIlree, West Union.

Greene—Greene County Fair Association, Jefferson; President, M. M. Head, Jefferson; Secretary, E. C. Freeman, Jefferson.

Grundy—Grundy County Agricultural Society, Grundy Center; President, R. S. Plager, Grundy Center; Secretary, E. V. McBroom, Grundy Center.

Guthrie—Guthrie County Agricultural Society, Guthrie Center; President, B. F. Davidson, Menlo; Secretary, Wm. Edwards, Guthrie Center.

Hancock—Hancock County Agricultural Society, Britt; President, Dr. A. J. Cole, Britt; Secretary, R. L. McMillin, Britt.

Hardin—Hardin County Agricultural Society, Eldora; President, W. R. Schofield, Eldora; Secretary, Geo. W. Haynes, Eldora.

Harrison—Harrison County Agricultural Society, Missouri Valley; President, J. E. Jones, Missouri Valley; Secretary, A. B. Hosbrook, Missouri Valley.

Henry—Henry County Agricultural Society, Mt. Pleasant; President, John W. Palm, Mt. Pleasant; Secretary, C. H. Tribby, Mt. Pleasant.

Henry—Winfield Fair Association, Winfield; President, C. W. Larkin, Winfield; Secretary, Theo. Russell, Winfield.

Humboldt—Humboldt County Agricultural Society, Humboldt; President, W. B. West, Humboldt; Secretary, O. H. De Groote, Humboldt.

Iowa—Iowa County Agricultural Society, Marengo; President, Henry Willenbrook, Marengo; Secretary, R. H. Shannon, Marengo.

Iowa—Victor District Agricultural Society, Victor; President, E. L. Parks, Victor; Secretary, John C. Hinrichs, Victor.

Iowa—Williamsburg Pavilion and Fair Association, Williamsburg; President, D. O. Jones, Williamsburg; Secretary, H. A. Helverson, Williamsburg.

Jackson—Jackson County Agricultural Society, Maquoketa; President, A. L. Broxam, Maquoketa; Secretary, W. D. McCaffrey, Maquoketa.

Jasper—Jasper County Agricultural Society, Newton; President, C. F. Sauerman, Newton; Secretary, F. E. Meredith, Newton.

Johnson—Johnson County Agricultural Society, Iowa City; President, Dr. J. S. Potter, Iowa City; Secretary, John P. Oakes, Iowa City.

Jones—Jones County Agricultural Society, Monticello; President, ——————; Secretary, C. J. Northrup, Monticello.

Jones—Anamosa Fair Association, Anamosa; President, W. D. Shean, Anamosa; Secretary, L. W. Russell, Anamosa.

Keokuk—What Cheer District Agricultural Society, What Cheer; President, Jas. Stephenson, What Cheer; Secretary, Geo. A. Poff, What Cheer.

Kossuth—Kossuth County Agricultural Society, Algona; President, E. A. Wolcott, Algona; Secretary, S. D. Quarton, Algona.

Lee—Lee County Agricultural Society, Donnellson; President, Joseph Krebill, Donnellson; Secretary, Chris. Haffner, Donnellson.

Lee—West Point District Agricultural Society, West Point; President, Geo. E. Rogers, Wever; Secretary, John Walljasper, West Point.

Linn—Wapsie Valley Fair Association, Central City; President, E. E. Henderson, Central City; Secretary, H. F. Lockwood, Central City.

Linn—Marion Inter-State Fair Association, Marion; President, J. A. Cooper, Marion; Secretary, E. K. Michel, Marion.

Louisa—Columbus Junction District Fair Association, Columbus Junction; President, Wm. Dean, Columbus Junction; Secretary, W. A. Knott, Columbus Junction.

Lyon—Lyon County Fair and Agricultural Association, Rock Rapids; President, W. S. Cooper, Rock Rapids; Secretary, Chas. W. Bradley, Rock Rapids.

Mahaska—New Sharon District Agricultural Society, New Sharon; President, Sidney Harper, New Sharon; Secretary, J. C. Heitsman, New Sharon.

Marshall—Eden District Agricultural Society, Rhodes; President, C. J. Buck, Rhodes; Secretary, H. M. Weeks, Rhodes.

Marshall—Marshall County Fair Association, Marshalltown; President, D. S. Collins, Liscomb; Secretary, W. M. Clark, Marshalltown.

Mitchell—Mitchell County Agricultural Society, Osage; President, Albert Cordes, Osage; Secretary, Carl H. Spaanum, Osage.

Monona—Monona County Fair Association, Onawa; President, J. M. Hathaway, Onawa; Secretary, O. C. Erickson, Onawa.

Monroe—Monroe County Agricultural Society, Albia; President, W. B. Griffin, Albia; Secretary, J. L. Reddish, Albia.

Muscatine—Union District Agricultural Society, West Liberty; President, C. G. Brown, West Liberty; Secretary, W. H. Shipman, West Liberty.

Muscatine—Wilton Fair Association, Wilton Junction; President, C. C. Kaufman, Wilton Junction; Secretary, W. A. Cooling, Wilton Junction.

O'Brien—O'Brien County Agricultural Society, Sutherland; President, Chas. Van Etten, Sutherland; Secretary, R. J. Mott, Sutherland.

O'Brien—Sheldon District Fair Association, Sheldon; President,———; Secretary, Geo. Gardner, Sheldon.

Page—Shenandoah Fair Association, Shenandoah; President, Chas. Aldrich, Shenandoah; Secretary, A. W. Goldberg, Shenandoah.

Pocahontas—Big Four District Fair Association, Fonda; President, ———; Secretary, E. A. Elliott, Fonda.

Pottawattamie—Pottawattamie County Fair Association, Avoca; President, R. Frost, Avoca; Secretary, B. A. Krienke, Avoca.

Poweshiek—Poweshiek County Central Agricultural Society, Malcom; President, Wm. McClure, Malcom; Secretary, James Nowak, Malcom.

Poweshiek—Grinnell Fair Association, Grinnell; President, J. A. Bangham, Grinnell; Secretary, I. S. Bailey, Jr., Grinnell.

Sac—Sac County Agricultural Society, Sac Ctiy; President, L. E. Irwin, Sac City; Secretary, Gus Strohmeier, Sac City.

Shelby—Shelby County Agricultural Society, Harlan; President, Geo. H. Miller, Harlan; Secretary, L. H. Pickard, Harlan.

Sioux—Sioux County Agricultural Society, Orange City; President, A. Vande Meide, Orange City; Secretary, Albert Humstra, Orange City.

Story—Central Iowa Fair Association, Ames; President, C. L. Siverly, Ames; Secretary, E. H. Graves, Ames.

Tama—Tama County Fair Association, Toledo; President, W. N. Townsend, Garwin; Secretary, A. G. Smith, Toledo.

Taylor—Taylor County Agricultural Society, Bedford; President, Dr. T. E. Anderson; Secretary, C. N. Nelson, Bedford.

Van Buren—Milton District Agricultural Society, Milton; President, N. E. Guernsey, Milton; Secretary, D. A. Miller, Milton.

Wapello—Eldon Big Four Fair Association, Eldon; President, D. A. Jay, Eldon; Secretary, H. R. Baker, Eldon.

Warren—Warren County Fair Association, Indianola; President, J. E. Houghtaling, Indianola; Secretary, J. Fred Henry, Indianola.

Wayne—Sewal Fair Association, Sewal; President, Everett Shriver, Sewal; Secretary, Loren Johnston, Sewal.

Winnebago—Forest City Park and Fair Association, Forest City; President, F. J. Brooker, Thompson; Secretary, R. W. Stephenson, Forest City.

Winneshiek—Winneshiek County Agricultural Society, Decorah; President, G. F. Baker, Decorah; Secretary, L. M. Enger, Decorah.

Worth—Worth County Agricultural Society, Northwood; President, Jno. M. Slosson, Northwood; Secretary, N. T. Christianson, Northwood.

Wright—Wright County Agricultural Society, Clarion; President, I. L. Walls, Clarion; Secretary, Ed Hood, Clarion.

Woodbury—Inter State Live Stock Fair Association, Sioux City; President, F. L. Eaton, Sioux City; Secretary, Joe Morton, Sioux City.

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